Arris and Gale Lectures

ON

THE PHYSIOLOGY OF LYMPH FORMATION.

Delivered before the Royal College of Surgeons on Feb. 5th, 1894,

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LECTURE I.

MR. PRESIDENT AND GENTLEMEN,—It was shown by Ludwig and his pupils that the ultimate ramifications of the lymphatics were continuous with the intercellular spaces of the various tissues, so that the tissue juices are synonymous with lymph, and in all parts of the body, except in Bowman's capsule of the kidney, the medium immediately surrounding the cells is lymph. The lymph is thus the middleman between the blood and tissues, and all the interchanges that go on between tissues and blood must take place through its mediation. The lymph then, in any part, may be regarded as having a twofold origin, for it consists partly of substances which have been given up to it by the tissue cells and partly of substances which have left the bloodvessels. It has often been supposed that the lymph left the vessels in a continuous stream, bathed the cells, giving up to them nutrient matter and receiving from them their waste products, was then collected into lymphatics and returned by the thoracic duct into the blood; so that, by analysing the lymph coming from any given part and comparing its composition with that of the blood plasma, we could find out the metabolic changes that had occurred in that part. This, however, is not correct. The lymph flow from any given tissue affords us no clue to changes that are occurring in that tissue. We know that in a limb at rest active metabolic changes are going on, and yet from this limb there is no lymph flow whatever; so that we must look upon the lymph as stationary, taking up from the blood and giving to the tissues the substances which these latter require, and taking up from the tissues and giving to the blood the waste products. Had we only examined the behaviour of the resting limb we should have no right to speak of a lymph flow at all. The presence of lymphatic channels, however, shows that, under certain circumstances, there must be an excess of production over absorption, so that the tissue spaces become overfull, and the excess of fluid has to be carried off by lymphatic channels. This excess of production, which under physiological conditions is slight, may under pathological conditions become so large that the excess can no longer be carried off by the lymphatics, and, accumulating in the spaces, gives rise to dropsy. Hence it becomes of great practical importance to study the conditions which regulate the flow and composition of the lymph in the various parts of the body.

Ludwig long ago put forward the view that the flow and composition of the lymph might be explained by the known physical laws of diffusion and osmosis. He says: "The blood which is contained in the vessels must always tend to equalise its pressure and its chemical constitution with those of the extra-vascular fluids, which are only separated from it by the porous blood-vessel walls. If, for example, the quantity of blood in the vessels is increased, the mean blood pressure is also increased, and at once a portion of the blood is driven out into the tissues by a mere process of filtration. The same result is brought about when the constitution of the blood is altered by the absorption of food or by increased excretion through kidneys, lungs, or skin, or when the composition of the tissue fluids is altered in consequence of increased metabolic changes taking place in the tissues. In the latter case the changes brought about in the lymph are effected by processes of diffusion." Since it is a condition of the maintenance of life that these chemical changes in the tissues should go on, and that the waste products should be continually excreted by the kidneys, lungs, and skin, there must be at the same time constant changes in the amount and composition of lymph produced.

The question that we have now to discuss is whether these two processes of filtration and diffusion will really account in all cases for the lymph flow and composition. It was shown many years ago, by Majendie and others, that chemical differences between blood and lymph provoked a transference of the substance that was in excess from one side of the vessel wall to the other. Thus if colouring matters, salts or sugar, be injected into the blood, they are very shortly afterwards found in the lymph in various parts of the body. If, on the other hand, these substances be injected into the tissue spaces or into the pleural or peritoneal cavities, their existence can very soon be detected in the blood, whence they make their way into the urine. Since these interchanges take place after the introduction of abnormal as well as normal substances into the body, we must assume the general application of these results and look upon processes of diffusion as one of the factors in regulating the composition of the lymph. Not so successful hitherto have been the attempts to demonstrate a direct relationship between blood pressure and lymph formation. According to Ludwig's view, if A be the pressure within the capillaries and B the pressure of the fluid in the tissue spaces outside the capillaries, the amount of lymph produced must be proportional to the difference between A and B. In the earliest work, carried out in Ludwig's laboratory, this relationship seemed to hold good. Thus, on passing defibrinated blood through a limb, it was found that the amount of lymph produced was proportional to the pressure under which the blood was sent through the vessels. Later on Tomsa, experimenting on the lymph flow from the testis, found that the flow was largely increased by ligature of the pampiniform plexus, under which conditions of course the capillary pressure must be largely increased. It then became important to decide whether the same result might not be produced in the living body by increasing the arterial pressure in any given part. Two researches in this direction were undertaken by Paschutin and Emminghaus. The former observer investigated the flow of lymph from the upper extremity of the dog. He showed, in the first place, that at rest there was no flow of lymph from the arm, and it was therefore necessary to employ passive movements of the limb or to knead it at regular intervals. In this way a fairly constant flow of lymph might be kept up. In this case the effect of squeezing the limb would be to empty the tissue spaces, so that, on relieving the pressure, the tension in these spaces would be diminished, and the quantity A *minus* B increased. The augmented flow of lymph obtained in this way is therefore consonant with Ludwig's hypothesis. On the other hand, it is impossible to increase the lymph flow by increasing the pressure of the blood in the vessels of the limb. Thus section of the brachial plexus was without effect on the lymph flow. In other experiments the brachial plexus was cut and the spinal cord divided and stimulated, so that there was constriction of all the arteries in the body with the exception of the fore limb under observation. Even this rise of pressure had no effect on the lymph produced. Paschutin himself comes to the conclusion that there must be some factor other than the blood pressure determining the amount of lymph produced, and suggests that perhaps this factor is the living vessel wall. Emminghaus then carried out a similar series of experiments on the lymph flow from the hind paw of the dog. In the main, his results corroborate those obtained by Paschutin. In two experiments, however, he observed a slight increase in the amount of lymph produced, after section of the sciatic nerve. A little later Rogowicz repeated Emminghaus' experiments with slight alterations and found nearly invariably an increase in the lymph after section of the sciatic nerve or in consequence of active vaso-dilatation. He confirmed moreover the fact that had been pointed out by Paschutin—i.e., that the injection of a small dose of curare exerts a greater influence on the lymph flow than the highest rise of blood pressure that could be produced experimentally. On injection of curare the amount of lymph was increased four to six times, and the percentage of solids was at the same time augmented. He shows that this effect of curare cannot possibly be due to any influence it has on the pressure in the capillaries, and concludes that this substance must be looked upon as a "lymph-treibendes Mittel"—that is, as a substance having a specific action on the endothelial cells of the vascular wall and increasing the flow of lymph just as diuretics increase the flow of urine. We thus see that the experiments carried out by Ludwig's pupils afford very doubtful support to his hypothesis, and that it seems impossible to explain the facts of lymph production simply on the filtration hypothesis. The inadequacy of this hypothesis was pointed out in a critical article by Tigerstedt. This observer had shown that there is no comparison between the behaviour of a living membrane and the

behaviour of a dead membrane. A frog's lung, which under pressure of 20 ccm. of water will not allow a drop of normal saline to pass through it, will, if killed, permit the passage with the utmost ease. Leber had already shown that the great resistance of the cornea to filtration pressure was dependent solely on the single layer of cells forming Descemet's membrane. This layer once destroyed, the fluid passed with the utmost ease. Tigerstedt, on reviewing the facts ascertained so far, came to the conclusion that lymph is a secretion, its formation being determined solely by the condition of the endothelial cells of the capillaries, and not by the hydrostatic pressure existing on one side of these cells. Even the effect of venous obstruction seems difficult to explain on the filtration hypothesis. The lymph of venous obstruction, as was shown by Emminghaus and Cohnheim, presents certain constant changes; the amount of solids in it is diminished, while at the same time a number of red corpuscles appear in it, which have left the vessels by diapedesis. The mere diminution of solids might perhaps be explained mechanically, since Runeberg had shown that, on filtering albuminous fluids through animal membranes, the amount of proteid in the filtrate was diminished as the filtration pressure was increased. On the other hand, if the red corpuscles are squeezed through pores in the capillary walls, it is hard to understand why the fluid plasma should not also get through these openings, and why the amount of solids in the lymph does not increase instead of diminishing.

All these experiments suffer from the drawback that they were carried out in parts where there was no lymph flow and where it was necessary to use artificial means in order to get any flow at all. Moreover, the total amount of lymph obtained in a given time is so small in relation to the blood which has passed through the vessels of the limb, that it is impossible, from a study of the composition of the lymph, to arrive at even an approximate idea of the composition of the fluid that has left the bloodvessels. From the lymphatic trunk of the neck one may obtain a constant flow at rest, but the amount here is also extremely small, and one must wait a very long time in order to obtain a quantity sufficient for analysis. Only from one region of the body does one obtain at rest a constant and adequate flow of lymph, and that is from the abdominal organs. This lymph may be obtained with great ease by putting a cannula in the thoracic duct. The study of lymph from this situation has been objected to on the ground that it is derived from every part of the body. In the animal which is quietly resting on a board this objection does not hold, since we know already that there is no flow during rest from any of the limbs. The lymphatic of the neck is ligatured in preparing the thoracic duct, and Bohr has shown that there is no flow from the lungs or thoracic cavities, so that we can regard the lymph obtained from the thoracic duct as having practically a threefold origin—viz., from the intestines, the liver, and the kidney. Moreover, the amount flowing from the kidney under normal circulatory conditions is so small that it can be disregarded; so that the sources of the lymph flow from the duct are quite manageable and fit for experimental investigation.

There is one objection, however, which might be urged. Since the lacteals are one of the channels of absorption from the intestines, it might be thought that we had here an unknown factor. It has, however, been shown that the digestion of food has not the slightest influence on the amount of lymph flowing from the thoracic duct. The only difference between the duct lymph of digesting and starving animals lies in the fact that the former contains a large quantity of fat. It is well, however, on this account to experiment always on fasting animals, in which the intestines are empty, and we have only to regard the changes in the lymph flow produced by changes in the circulatory conditions and in the tissues in which the lymphatic radicles have their origin.

In recent years an important research has been carried out by Heidenhain on the lymph flow from the thoracic duct. This observer comes to the conclusion that the physical processes of filtration and diffusion play only a subordinate part in the formation of lymph, and that, as Tigerstedt thought, lymph is a true secretion dependent for its production on the activity of the endothelial cells of the capillaries. Since my experiments have been mainly a repetition and amplification of Heidenhain's, I must deal with his arguments at some length. We can consider his experiments under two headings: firstly, the effect of artificial changes in the abdominal circulation, and, secondly, the effect on the amount and composition of the lymph of injecting various substances into the blood.

1. *Mechanical interference with the circulation.*—Colson had pointed out that, on obstruction of the thoracic aorta, the flow from the thoracic duct at once came to a standstill. This result, as Heidenhain showed, was due to a faulty position of the aortic obturator, which acted mechanically by obstructing the thoracic duct. Heidenhain, on repeating the experiment many times, found that in all cases the lymph flow continued, although the pressure in the abdominal vessels, as measured by a manometer connected with the femoral artery, had sunk nearly to nothing. In most cases the flow was diminished, although the diminution had no relation to the enormous diminution in the arterial pressure. In some cases, however, the lymph, instead of being diminished, was increased. Thus in one experiment, when the arterial pressure was 93 mm. Hg, the amount of lymph obtained in the succeeding ten minutes was 2·1 and 1·6 c.cm. The thoracic aorta was then occluded, and the pressure in the femoral artery sank to 22 mm. Hg, while the lymph obtained was 2·8 and 1·4 c.cm. In the succeeding ten minutes, while the pressure was 16 mm. Hg, the lymph rose once more to 2 c.cm. The obturator was then removed, the pressure rose to 85 mm. Hg., and the lymph obtained was 2·1 and 2·0 c.cm. The pressure then rose to 115 mm. Hg, and the lymph obtained was 2·7 c.cm. The aorta was then again occluded, the pressure falling to 11 mm. Hg, while the amount of lymph obtained rose to 3·3 and 3 c.cm. Here there is obviously no relationship between the blood pressure in the abdominal arteries and the amount of lymph produced. That the lymph is really newly formed and is not preformed lymph pressed out by respiratory movements is shown by the fact that its appearance and composition are altered; it becomes whitish and opaque from the presence of very fine proteid granules, the amount of solids it contains is largely increased, and its coagulability is diminished. Heidenhain concludes that this lymph could not have been formed by any process of filtration, since all the conditions for this process are wanting.

On obstructing the portal vein, Heidenhain obtained the same results as had been obtained on the limbs by Emminghaus and Cohnheim. The amount of lymph was largely increased, and contained a large amount of red corpuscles, while its total solids were diminished from about 6 to 4 per cent. In this case there is, of course, a very large rise of pressure in the capillaries of the intestines and spleen, which became distended and black with venous congestion. Heidenhain is inclined to ascribe this effect to the increased pressure, so that, under these circumstances, lymph formation would be a process of filtration. In another series of experiments the inferior vena cava was obstructed above the diaphragm, the obturator (a rubber capsule at the end of a German silver catheter, which could be distended with water) being introduced through the external jugular vein. In this case the flow of blood from the abdominal viscera is impeded but not absolutely stopped. If the abdomen be open it will be seen that, on obstructing the inferior vena cava, the intestines become blanched and anæmic, while the liver is more full of blood than before. At the same time the arterial pressure falls to about a third of its previous height. Coincidently with these changes in circulation a marked change occurs in the lymph flow from the cannula in the thoracic duct. The lymph is enormously increased in amount, and undergoes alterations both in appearance and composition. Thus in one experiment, in the ten minutes before the obstruction 3·1 c.cm. of lymph were obtained, containing 4·8 per cent of solids; the arterial pressure was 125 mm. Hg. The inferior cava was then obstructed above the diaphragm, and the arterial pressure sank to 37 mm. Hg. In the next ten minutes 22 c.cm. of lymph were obtained, containing 6·41 per cent. of solids, and this increased flow continued till the animal died forty minutes later. The lymph at the same time becomes less and less coagulable, so that the later portions may be still fluid on the following day. The question now arises, What is the source of this lymph? Obstruction of the inferior cava below the kidney has no effect on the lymph flow. Obstruction just above the kidney causes a slight increase in lymph flow, with a diminution of total solids. Hence the lymph must come either from the intestines or the liver. Heidenhain sought to decide between the two in the following way. At the death of the animal, while the vein was still obstructed, he opened the abdomen. He found then that on squeezing one or two coils of intestine in the hand there was enormous quickening of the flow from the duct. On the other hand, by the strongest pressure on the liver he could not squeeze a

single drop from the duct. He thus concludes that the source of the lymph obtained on obstruction of the inferior vena cava is the same as that of the lymph obtained on ligaturing the portal vein. Now, in the former case there is a great fall in arterial pressure and a great rise in the amount of lymph. That it is not the lymph of ordinary venous obstruction is shown by the increase of solids in it, an increase which is more marked the lower the blood pressure is, as shown by the following figures taken from one experiment:

Pressure in femoral artery.		Percentage of total solids in lymph.
136 mm.	.....	6·11 per cent.
50 ,,	.....	6·96 ,,
25 ,,	.....	8·02 ,,
42 ,,	.....	6·87 ,,
60 ,,	.....	6·08 ,,
16 ,,	.....	7·67 ,,

Hence we have here neither venous obstruction nor increased arterial pressure, and, therefore, none of the mechanical conditions which would be required if this lymph were produced by a process of filtration. It must, therefore, be due to the secretory activity of the capillary wall. Heidenhain does not attempt to explain why the capillary wall should be moved to secrete under these conditions.

2. *Injection of substances into the blood.*—I have already mentioned Paschutin's and Rogowicz's discovery of the specific action of curare on the lymph production in the limbs. Heidenhain, searching for bodies which might have a similar specific action, was struck by the effect of certain foods, such as crayfish and mussels, in producing nettle-rash. It was thought that these might afford examples of the bodies in question. He prepared a decoction of crayfish muscles in the following way: the muscles were finely minced and put under alcohol for a considerable time; when dehydrated they were dried in the air and ground up in a coffee mill; 5 grammes of the powder so obtained were boiled for a short time with 100 cc. of normal saline fluid. 30 or 40 cc. of the decoction so obtained, on injection into the veins of an animal, gave rise to a very large increase in the lymph flow. From the decoction the active body could be precipitated by alcohol and formed only a small percentage of the fluid. The decoction gave a cloudiness with nitric acid which was not removed by boiling, and also a precipitate with potassium ferrocyanide and acetic acid. The general characters of these solutions seem to point to the active body being of the nature of an albumose, but the active substance has not yet been separated in a pure condition.

We must now consider the action of this crayfish extract rather more fully. If the decoction be injected slowly, there is no fall of arterial blood pressure, the only effect on the circulation being that the heart, which was previously irregular and slow in consequence of the morphine anæsthesia, becomes rather faster and more regular. Almost immediately after the injection the lymph begins to drop from the cannula more quickly, and is increased to from three to ten times its previous amount. The first portions of lymph after the injection may be whitish, but it soon becomes clear and transparent. Changes also occur in the composition and coagulability of the lymph. The solids in the lymph are largely increased, on the average from 6 per cent. before the injection to about 8 per cent. after the injection; of course these figures vary with the varying composition of normal lymph; at the same time, the coagulability is diminished and in most cases entirely abolished, the lymph being fluid two or three days later. The increase in the lymph flow lasts from thirty minutes to an hour after the injection. We must next consider whether this increased lymph flow is derived from the blood or from the tissues. For this purpose we must find out what, if any, changes take place in the composition of the blood in consequence of the injection of this extract. On determining the total solids in the blood before and after injection we find that there is a marked increase in the total solids produced by the injection. Thus, in one case, the total solids in the blood before the injection were 21·13 per cent.; ten minutes after the injection had been completed they were 22·65 per cent. This increase in total solids is occasioned by a diminution in the total volume of the circulating plasma. We find in fact that, *pari passu* with this increase in solids, there is an increase in the relative amount of hæmoglobin in the blood. The total solids are augmented because there is an increase in the relation of corpuscles to plasma. These facts show that the larger amount of lymph obtained is derived, for the most part at any rate, from the blood. It is evident that a simple loss of plasma from the blood would not in itself alter the composition of plasma in the bloodvessels. Nevertheless we find, on estimating the amount of total solids in the blood plasma or serum before and after the injection, that the plasma has become more watery in consequence of the injection. In one experiment, before the injection the serum contained 8·09 per cent. total solids; ten minutes after the injection the blood plasma only contained 7·68 per cent. total solids. How are we to explain this change in the composition of the plasma? Heidenhain concludes, since the plasma has become more watery and at the same time lessened in amount owing to the injection, that a fluid more concentrated than the plasma has left the bloodvessels, a process which he can only ascribe to the activity of the capillary walls.

In crayfish extract, then, we have a typical example of a lymphagogue substance, which, without altering the conditions of the circulation, excites the vascular endothelium to secrete large quantities of a more concentrated lymph. To make the analogy of capillary endothelium with the epithelium of ordinary secreting glands more complete, he devised the following experiment. It is well known that long deprivation of blood injures the secreting epithelium of the submaxillary gland, so that it can no longer be made to secrete by ordinary stimuli. He thought that perhaps the same thing might hold good for the endothelium of the abdominal vessels, and therefore tried the effect of a long-continued occlusion of the thoracic aorta on these vessels. He found that, if crayfish extract was injected into the blood stream after the thoracic aorta had been occluded for about two hours, the lymph flow was unaltered; the capillary cells no longer reacted to the chemical stimulus represented by this extract.

On injecting extract of crayfish muscle into the blood, the coagulability of the blood as well as that of the lymph is affected. He therefore tried the effect of injecting various other bodies which were known to diminish the coagulability of the blood. Thus leech-extract had exactly the same action. Extract of mussels prepared in the same way as the crayfish-extract had also a powerful influence on the lymph flow, accompanied, however, by an initial fall of arterial blood pressure.

A solution of commercial peptone (albumoses + peptone) has long been used as a means of inhibiting coagulation of the blood, and it was pointed out by Fano that the loss of coagulability, induced by the injection of this substance, was shared by the lymph. This observer failed to notice that an enormous increase in the lymph flow from the thoracic duct is at the same time produced. Injection of peptone, however, seriously affects the heart, so that the blood pressure sinks very low indeed and the heart contractions become feeble. This heart failure might produce a venous congestion in the abdominal organs, and we might be here merely imitating the effects produced by the obstruction of the inferior vena cava above the diaphragm. Heidenhain found, however, that in some cases it was possible to produce an increased lymph flow without any fall of blood pressure, by injecting a small amount of peptone very slowly directly into the descending aorta. He succeeded, moreover, in two experiments in completely abolishing its effect on the lymph flow by previous prolonged obstruction of the thoracic aorta. Heidenhain concludes, then, that peptone, like leech-extract and the other members of this class of lymphagogues, has a specific action on the capillary endothelial cells, exciting these to secrete an increased amount of concentrated lymph, though it differs from these in the fact that, whereas one must inject from two to five grammes of peptone to produce an appreciable effect on the lymph flow, a corresponding result is obtained with less than one or two decigrammes of the active substance in leech or crayfish extract. One other fact may be brought forward in favour of the view that the increased flow of lymph following the injection of peptone is brought about by a secretory activity of the endothelial cells. Working under Heidenhain I found that, by using trichloracetic acid to precipitate the coagulable proteids of the plasma, one could demonstrate the presence of peptone in the blood one or two hours after it had been injected, and the amount present might be estimated colorimetrically. I found, confirming an observation of Shore, that within half a minute after the injection of peptone into the blood this body may be detected in the lymph. During the first few minutes after the injection the amount of peptone in the blood sinks rapidly, while that in the lymph rises, so

that about five or ten minutes after the end of the injection the amount of peptone in the two fluids is the same. A few minutes later the amount of peptone in the lymph is found to be higher than that in the blood. From this time onwards the amounts of peptone in the two fluids gradually sink, the amount, however, in the lymph always exceeding that in the blood. Since there is no evidence that peptone may be destroyed in the blood, the diminution must take place in consequence of this body passing into the lymph; so that the peptone passes from blood plasma into lymph—from a less concentrated into a more concentrated solution. To bring about this concentration it is necessary that a certain amount of energy be expended. If this energy be expended by the endothelial cells, we have an example of secretory activity similar to that displayed by the secreting cells of the kidney. Hence I concluded from my observations that the action of peptone on the capillary walls is analogous to that of urea on the renal epithelium, and that the lymph must therefore be looked upon as a secretion.

Another class of bodies has been described by Heidenhain under the name of "lymphagogues," which resemble the first class in increasing the lymph flow from the thoracic duct, but differ from them in almost every other particular. These include all crystalloid bodies which can be injected in appreciable quantities into the circulation without poisoning the animal. As examples of these we may mention sugar, sodium chloride, potassium iodide, sodium sulphate, urea—in fact, any bodies allied to these. On injecting into a moderate-sized animal forty grammes of grape sugar dissolved in equal bulk of water, there is an enormous increase in the lymph flow. The lymph which is obtained after the injection is clear and watery, and contains much less total solids than before the injection. Its coagulability is diminished, probably in consequence of the mere dilution it has undergone. The arterial pressure is practically unaffected. If the injection be made too quickly there may be a slight temporary fall of pressure during the injection. In some cases there is a trifling rise of pressure after the injection; the pulse, however, is quickened. When we study the behaviour of the blood after the injection of these bodies, in order to ascertain the source of the lymph, we find that the blood has undergone changes the reverse of those which we observed after the injection of the first class of lymphagogues. The blood, instead of being more concentrated, is more watery. The total solids and the amount of hæmoglobin in it are diminished, and the plasma also is more watery than before the injection. After the injection of sugar, then, the amounts both of lymph and of blood are increased, and the accelerated lymph flow cannot, therefore, be derived from the blood. Both fluids, in fact, must be increased at the expense of a third factor—i.e., the tissues.

Coincidently with this marked flow of lymph, the injection of sugar &c. produces a large urinary secretion, and we find that there is a direct parallelism between the lymphagogue and diuretic actions of these bodies. Heidenhain found, moreover, that their action as lymphagogues or diuretics is proportional to the osmotic pressure of the solution injected. It was shown by de Vries and Pfeffer that the osmotic pressure, or power of attracting water, of the various allied salts varied inversely as their molecular weights, so that solutions of a gramme equivalent of the haloid salts of sodium or potassium in a litre of water would all have the same osmotic pressure. If we took, then, 10 per cent. solutions of sodium chloride, bromide and iodide, the osmotic pressures of the three solutions would be in the inverse ratio to their molecular weights, so that the sodium chloride would have the greatest attraction for water, and the iodide solution the least. Heidenhain found that the same thing holds good for their action on the lymph flow, so that the lymphagogue action of the various crystalloids, as well as their diuretic powers, must be conditioned in some direct way by their osmotic pressures. The physical basis of their lymphagogue action seems, moreover, to be shown by the fact that it is impossible to annul their effect by previous continued anæmia of the abdominal organs. Thus in one experiment, after the aorta had been occluded for two hours, injection of a large quantity of crayfish extract was without effect on the lymph flow. Heidenhain then injected a solution of sugar into the veins; at once the usual effect was produced, and the lymph flow from the thoracic duct was very considerably increased. One fact, however, seemed to negative the possibility of a purely physical explanation of the lymphagogue action of these substances. Comparative estimations of the sugar in lymph and blood plasma showed that the sugar rapidly passed from the blood into the lymph, so that a short time after the injection had been completed there was a larger percentage amount of sugar in the lymph than in the blood, and for a short period the amount of sugar in the lymph went on rising, while that in the blood was sinking, so that sugar was passing from a medium containing less to a medium containing more of it. There is thus work done in converting a dilute into a more concentrated solution of sugar, and Heidenhain ascribes this work to the cells of the capillary walls. Here, again, the endothelial cells of the capillaries seem to be endowed with a secretory activity similar to that of the renal cells. This observer, then, would explain the action of these bodies in the following way. When the blood containing a large excess of, say, sugar arrives at the capillaries, the cells forming the walls of these tubes seize on the sugar and excrete it on the other side into the lymph spaces. Arrived here in a concentrated solution, it robs the tissues of water, so that the volume of the interstitial fluid is largely increased, and the excess flows away and gives rise to the largely increased lymph flow. At the same time water passes from lymph to blood by a process of diffusion, and the blood also becomes largely diluted. In this way the relation of the lymphagogue action of these bodies to their molecular weights is rendered intelligible, and we have a further example of the secretory powers of the vascular endothelium.

Heidenhain concludes from all these experiments that under normal circumstances the process of filtration plays no part in the production of lymph, although he does not deny that under pathological conditions, such as heart disease and cirrhosis, the dropsy or ascites may be, and probably is, conditioned by the increased intracapillary pressure acting in many cases on a capillary wall already weakened and abnormal in consequence of anæmic and diseased conditions of the blood. It is evident that, if these conclusions are correct, we must alter our whole position with regard to lymph formation, both under physiological and pathological conditions. Cohnheim taught us to regard dropsy as dependent on two factors—viz., alteration of the blood pressure and alterations of the vascular wall. Working from the standpoint attained in Heidenhain's paper, we must, when dealing with any œdema, local or general, ask whether the increased lymph production, which causes it, may not be a physiological reaction of the capillary walls to some stimulus exciting an active secretion of lymph. This stimulus may be of two kinds. One kind, which we have already studied under the name of "lymphagogues," is chemical. The other mode of stimulus, the existence of which is strongly suspected both by Tigerstedt and Heidenhain and assumed by many pathologists, is nervous. Why should not the vessel walls be supplied with secretory nerves, just as is the submaxillary gland? Nervous œdema, from a pathological curiosity of dubitable existence, becomes a practical problem for the physiological laboratory. It was from this standpoint that I began my present work on the subject, and with the expectation of being able to explain all the phenomena of lymph formation as a reaction of the endothelial cells to chemical and nervous stimuli. The results of these investigations I will defer until the next lecture.

A Clinical Lecture

ON

A CASE OF ABSCESS OF THE LIVER ASSOCIATED WITH ULCERATIVE COLITIS.

Delivered at Guy's Hospital, Feb. 3rd, 1894,

BY W. HALE WHITE, M.D., F.R.C.P.,

PHYSICIAN TO GUY'S HOSPITAL.

GENTLEMEN,—The case I propose to bring before you to-day is that of a man aged forty-three, who was admitted into Guy's Hospital on Jan. 20th of this year for severe pain in the hepatic region. He had never been abroad, had never lived in ague-producing districts, and had never had dysentery. He had had gonorrhœa, but not syphilis. His history is as follows. He had been half-starved for some time, but stated that he did not definitely feel ill till Jan. 2nd, when he had a severe pain in the right hepatic area and he felt cold and shivering. For a

week or more before this his bowels had been constipated. He stopped at home, but not in bed, for a week, all of which time he felt very ill, feverish, and thirsty. On the 9th he took to his bed and remained there till he was brought to the hospital. About this time the bowels were opened by castor oil, but after that they were again constipated for a week; then, after a purgative, they were again opened. The motions were fluid and yellow, without blood. He vomited several times and perspired a good deal. When admitted to the hospital he was wasted and sallow, but not jaundiced, the temperature was 101·4° F., the pulse 124, and the respirations 30. The tongue was furred. On looking at the abdomen there was found to be considerable enlargement in the right hypochondrium. Only the lower part of the abdomen moved freely in respiration. Above and to the right of the umbilicus, in addition to the general enlargement, there was a slight prominence, circular, and about three inches in diameter. This area was dull, elastic, non-pulsatile, and very tender. The edge of the liver was half an inch below the umbilicus; it was rather thicker than usual and moved but slightly on respiration. The gastric resonance was displaced considerably to the left, occupying the splenic area. The upper border of the liver dulness was normal—or, at any rate, not more than half an inch higher than normal. The cardiac and pulmonary sounds were healthy, except for a hæmic murmur. The air entered both sides of the chest equally. The motions were fluid, very offensive, and contained pus and blood. There was no bile nor albumen in the urine. These, then, gentlemen, were the facts we had to harmonise in making a diagnosis, and naturally the prominence at the upper and right part of the abdominal wall first attracted our attention. A careful examination of this convinced us that it was not in the abdominal wall, and that therefore it was probably in the liver, which supposition was in accordance with the fact that the lower edge of the liver was so low. As the patient's temperature was raised, as he had had a rigor, and as he had the hectic sallow look that is so suggestive of pus, we had no difficulty in deciding that the painful swelling was in all probability due to an abscess in the right lobe of the liver, at its lower part and near the surface, and that, as there was such a prominence, in all probability it was adherent to the anterior abdominal wall, especially as this did not move over it in respiration. It was suggested by some of you that, perhaps, as the liver was so low, some of the displacement was due to a second abscess between it and the diaphragm, pressing it down. Now, had that been so, we should have expected that the addition of an abscess on the top of the convex upper surface of the liver would have given a rounded dome-shaped area of dulness extending upwards from the upper limit of the normal hepatic dulness, especially in the mid and posterior axillary regions. On two or three occasions I have been able in the wards to demonstrate this area of dulness in such cases. The liver, with its rounded abscess on the top of it, is not unlike a cottage loaf. The presence of such an abscess usually leads to compression of the lung from pressure upwards of the diaphragm, and for the same reason to impaired movement and entry of air on the right side of the chest. There were none of these signs of a sub-diaphragmatic abscess. Some of you again suggested that the patient had an abscess connected with a perforated gastric or duodenal ulcer, but of this there was no evidence—for these abscesses, which are very rare, are generally further to the left and usually give signs of containing air.

Now, the varieties of hepatic abscess are: 1. Tropical abscess. This is usually single, but there may be two or three in the same liver. It is often associated with dysentery. 2. Traumatic abscess. A blow in the region of the abdomen has been known to give rise to an abscess in the liver, although it perhaps more frequently causes a sub-diaphragmatic abscess. 3. A suppurating hydatid. 4. A suppurating gall-bladder. 5. The abscess which is in many respects like a tropical abscess, but is met with in people who have never been abroad. These abscesses are sometimes associated with ulceration of the colon. 6. Multiple pyæmic abscesses, due to infection by the portal vein from some source of infection in the portal area. In such cases the liver is studded with patches of necrotic liver tissue, that have led in many situations to the formation of abscesses which can usually be traced to be in connexion with branches of the portal vein. Often, indeed, there is pus in the portal vein, and the case becomes one of pylephlebitis. Such abscesses are always numerous; they vary in size, but the majority are minute. They may, however, be as large as a Tangerine orange.[1] Abscesses like this may follow ulcer of the stomach, ulceration in the intestine, fistula in ano, operations for piles, abscess in the spleen, disease of the pancreas, appendicitis, and diseases of the female pelvic viscera. Multiple pyæmic abscesses also follow on ulceration of the bile ducts and gall-bladder due to the presence of gall-stones, and it is often stated that in these cases they are at the terminations of the bile ducts, but this is always difficult of proof, for the bile ducts and portal veins both run in the portal canals, and it seems to me that, as the venous blood from the walls of the gall-bladder and ducts is returned into the portal vein or its branches, these abscesses are probably, in reality, only a variety of portal pyæmia. Pyæmic abscesses of the liver have also been known to be secondary to a suppurating hydatid.[2] 7. Multiple pyæmic abscesses occur in connexion with general pyæmia, but in the majority of cases of pyæmic abscesses in the liver the source is in the periphery of the portal system. The mode of formation of abscesses in the liver in general pyæmia is shrouded in obscurity. As you know, the commonest seat for pyæmic abscesses in general pyæmia—say, that due to disease of some bone—is in the lungs; and this is easy to understand, for the infective material will be taken by the veins to the right side of the heart, and then to the lungs, where, being stopped by the minute capillaries, it will set up abscesses. When hepatic abscesses occur it is supposed that some of the infective material passes through the pulmonary capillaries into the left side of the heart, thence by the arterial system to the hepatic artery, and if not arrested in the capillaries of this, it is stopped in those of the portal vein, for the two sets of capillaries communicate, and thus the abscesses are produced in the liver. There is a difficulty in understanding how the infective material gets through the pulmonary capillaries, for the explanation that the arterial system is reinfected from the abscesses in the lungs will not, according to Wilks and Moxon, always hold good, because the hepatic abscesses may clearly be older than those in the lungs. You should, in passing, remember the well-known fact that it is—because of the anastomosis of the two sets of capillaries—very difficult to produce hæmorrhagic infarction of the hepatic artery; it is, for example, hardly ever found in malignant endocarditis. Some have thought that the infection of the liver in general pyæmia takes place through the hepatic veins by a backward flow along them, for they say that if quicksilver is injected into the jugular veins globules of it may be found in the terminations of the hepatic vein. 8. Hepatic abscess about a round worm or gall-stone. These, acting as foreign bodies, have been known to set up abscesses around them; but the condition is so rare that it could not be diagnosed during life. 9. Lastly, we have abscesses due to spread of surrounding inflammation. These are exceedingly rare.

Diagnosis.—We had, therefore, to think of all these causes of abscess of the liver. The abscess was not in the position of a suppurating gall-bladder, there was no history of a blow, and the patient had never been abroad. For these reasons suppurating gall-bladder, traumatic abscess, and tropical abscess seemed to be out of the question. The abscess was so large that we excluded both forms of multiple pyæmic abscesses. Single abscesses in persons who have never been abroad are very rare, and so we thought that, on the whole, a suppurating hydatid was most likely. An exploring needle was passed into the abscess and the pus was drawn off. This pus, which I show you here, was very blood-stained, and had somewhat the appearance of anchovy paste. Now this brick-red, anchovy paste colour of the pus is very suggestive that the abscess is in the liver itself, and that the colour is due to the admixture of broken-down hepatic tissue. On the other hand, a suppurating hydatid cavity is shut off from the substance of the liver by its own lining membrane, and therefore the pus in it is of an ordinary yellowish appearance, so that when we saw the pus which the exploring needle drew off we thought it unlikely that the case was one of suppurating hydatid, and it seemed to be probable that we had to deal with a large abscess of the liver—that rare variety met with in those who have never been abroad.

On the next day Mr. Lane operated. He found that the swelling was not a suppurating hydatid, but an abscess in the liver, and that, as we thought, the liver was adherent to the anterior abdominal wall. A drainage-tube was put in, but the bad prognosis originally hazarded from the patient's aspect was fully verified. He gradually sank, and died five days after the operation. His motions contained so much

[1] Murchison: Diseases of the Liver, third edition, Case 73.
[2] Ibid., Case 36.

pus that we thought that perhaps the abscess had a communication with the colon. His diarrhœa was very profuse, and no drugs were of any service.

You see before you what we found post mortem. There is one large abscess in the lower part of the right lobe of the liver, and it is surrounded by much necrotic liver substance. You see that, including the slough, it is in size about five inches by three inches. You will also notice, scattered about the liver, a number of smaller abscesses—those multiple small abscesses which indicate pyæmia. I can show you that they are at the ends of the portal vein, and there is a large trunk of the portal vein leading to the large abscess, which has also laid open a large branch of the biliary duct, and, as the gall-bladder has its lining membrane much thickened and inflamed, possibly the inflammation spread directly to it along the ducts. The pus could hardly have trickled into the gall-bladder because no pus was found in it. It is quite possible that some of the pus in the motions had passed down the hepatic and common ducts into the duodenum.

I need not detain you long about the symptoms in this case. The usual signs of hepatic abscess are fever, rigors, and wasting, with the local signs of the abscess. Our patient had all of these. You should remember that jaundice is very rare, unless the hepatic abscesses are pyæmic, in which case the jaundice is due to the pyæmia; that rigors are very common, that they often occur with regularity, and that the temperature rises and falls with a uniformity that is very suggestive of ague, especially as the patient has often been to parts of the world where he may acquire either ague or a tropical abscess. About two years ago I had in the Stephen ward an old man who had been in the tropics a great deal. He said he knew what was the matter—viz., that he had ague—and so it seemed to us. He was very feeble when he came in, and he died in a few days. He had an abscess about the size of a hen's egg deep down in the upper and posterior part of the right lobe of the liver. I should not like to be very dogmatic, but I fancy that these ague-like rigors do not occur in suppurating hydatids. Although common, they certainly are not constant in tropical abscess of the liver.

Let us now try to see if we can, by the light of a post-mortem examination, understand our case. It was not a tropical abscess, for the man had not been abroad; but in order to get as clear a view as possible about hepatic abscesses we must say a few words about tropical abscesses of the liver. These, of which only 4 per cent. occur in women, are generally in the back part of the right lobe, and usually single, but there may rarely be two or three; they are, however, never numerous. They are often, but not always, associated with dysentery (tropical abscess being found in about 20 per cent. of the cases of dysentery), so that they have been said to be pyæmic, due to absorption from the dysenteric ulcers. That has long been felt to be an error, and it is a view which I have always, in discussing the question at the bedside, strongly opposed, for in the first place the characteristic of pyæmic abscesses is that they should be multiple and small; in the next place, in quite a large number of cases of tropical abscess of the liver no dysentery is present. Then, also, there is the important fact that sometimes in cases of dysentery we have tropical abscess of the liver and at the same time and in the same case multiple pyæmic abscesses probably due to absorption from the ulcerated intestine. You will find such a case recorded by Dr. Carrington.[3] He also refers to other instances of the same kind. Lastly, there is the fact that dysenteric ulceration may often be the starting point of multiple small pyæmic abscesses in the liver, even if the patient has not a tropical abscess. Recent discoveries make it look as though this teaching of the distinction between the two kinds of abscess were about to be proved correct, for a number of observers—e.g., Lösch, Kartulis, Koch, and Osler—have found an amœba in the stools of patients suffering from dysentery, and this creature has also been found in the floor of dysenteric ulcers, and by Kartulis and Osler in the pus from tropical hepatic abscesses. It is stated that these amœbæ are not constantly present in dysentery and that sometimes they are to be met with in the evacuations of persons who have no dysentery; but it may be that they are the cause of one variety only, and it is of very little value, as an argument, to contend that they are found in persons who have no dysentery, for the natives of many dysenteric districts remain free from the disease which Europeans contract readily. Probably both take in the amœba, or whatever is the cause of the disease, but the native is immune, although the European is susceptible. It has not been conclusively proved, but, taking all the circumstances into consideration, it seems likely that some forms of dysentery are due to this amœba. The discovery of this amœba in tropical abscesses of the liver is most interesting. It is only fair, however, to say that Professor Macfadyen in one case failed to find it. I have examined one case of tropical abscess, and I also failed to find it, but a negative result in a pint of pus is worth nothing. I believe it was found in a case that was in the hospital last autumn. Several of us looked at the pus in our present case and we did not find it, but then our patient had never been in the tropics. It has been stated by Nasse that it has been found in multiple pyæmic abscesses of the liver, but this statement certainly requires confirmation. If the observations I have detailed to you are correct, and this amœba has a causative value, we shall have to put the sequence of events thus. Many people swallow these amœbæ; in some no harm results, whilst in others they cause dysenteric ulceration of the intestine; sometimes, in these patients, they pass into the portal vein, and they may even do this without any previous ulceration of the bowel—when there, they are, like the scolices of the tænia echinococcus (which cause hydatids), carried to the liver, where they set up the abscess. You will notice that a single hydatid cavity is the rule, and a single tropical abscess is also the rule—a most curious result, for we should have thought that the amœbæ and the scolices would have been showered about indiscriminately in the liver. Also you will notice the strange fact that the amœba not only keeps alive after being attacked by the bile and the gastric, pancreatic, and intestinal secretions, but rarely causes ulceration till the large intestine is reached. If this hypothesis based on the presence of the amœba is correct, it is clear that we are right in separating tropical and pyæmic abscesses of the liver.

Let us turn back now to the consideration of our case, and let us first examine the intestine. You will see that the cæcum and the first part of the ascending colon are chronically ulcerated; large portions of the mucous membrane have been removed, exposing the muscular coat, and the wall of the gut is thickened. The rest of the ascending, of the transverse, and of the descending colon is riddled with ulcers, usually about the size of a pea, but irregular in shape and size; they, for the most part, are covered with sloughs, and the mucous membrane is thickened and swollen. The sections under the microscope, which you can examine afterwards, show that there is no malignant growth, the condition being one of chronic inflammation. In other words, we have a case of ulcerative colitis, the ulceration being most chronic about the cæcum. Now ulcerative colitis is a disease of which we do not know the cause—in fact, probably there is more than one distinct disease comprehended under this condition. For instance, a number of cases of ulcerative colitis are associated with chronic Bright's disease. The state of the large intestine in ulcerative colitis is so like that of dysentery that in many cases it would be hard, from looking at the gut, to say from which the patient had died; but it is clear from the different clinical symptoms of the two diseases that they are different. We never, for instance, in ulcerative colitis meet with the scanty motions of clear, gelatinous mucus, often tinged with blood, nor the fearful tenesmus and constant calls to stool which are so characteristic of dysentery. Ulcerative colitis, too, is hardly ever as acute as dysentery often is, and it is much more intractable. But, it may be asked, may not some cases of ulcerative colitis have a hepatic abscess associated with them just as dysentery has with it? Well, there is a certain amount of evidence that this is possible, for, although none of the cases of ulcerative colitis which we have had at Guy's Hospital during the last few years have had hepatic abscesses, yet Dr. Fagge[4] records a case of two very large abscesses in the liver associated with what, from the description, was almost certainly ulcerative colitis. Dr. Dickinson[5] also records a case of a large single abscess of the liver associated with ulceration of the colon, and he published another similar case in 1862. As in none of these cases had the patient been out of England, we must allow that probably there is a very rare form of ulcerative colitis which is accompanied by a large hepatic abscess very closely resembling tropical abscess of the liver. Perhaps in these cases there is a micro-organism which, acting like the amœba which probably causes dysentery, sets up the

[3] Transactions of the Pathological Society, vol. xxxvi., p. 224.

[4] Ibid., vol. xxi. [5] Ibid., vol. xxxii., p. 127.

intestinal ulceration and after being taken up by the portal vein causes the hepatic abscess. It is possible that our patient was an instance in point. If so, we must imagine that there has also been pyæmic absorption by means of the portal vein, which has caused the multiple pyæmic abscesses, and that therefore the case closely resembles those cases of dysentery in which, in addition to a large tropical abscess, there are multiple pyæmic abscesses in the liver. The suggestion has been made that when ulceration of the colon has been found with an abscess of the liver the hepatic abscess was primary, and that the pus from the liver, trickling down the bile-duct into the intestine, set up the colitis. There is no evidence to support this view, which is on the face of it unlikely; for we do not usually recognise ulcerative colitis as caused by the discharge of pus into the bowel. Case 82 in the third edition of Murchison's work, in which a hepatic abscess burst into the colon, and ulcerative colitis was found, may be quite as well explained on the supposition that the ulcerative colitis was primary as on that that it was secondary. In criticising the view here taken of our case it may be maintained that the large as well as small hepatic abscesses were pyæmic and due to absorption from the ulcerated colon. The fact that the large abscess had so much gangrenous liver substance around it perhaps supports this view, for it is well known that pyæmic abscesses of the liver are often preceded by gangrene of the liver substance; in fact, you can see this in the smaller abscesses here. The great objections to this view are not only that this would be a very large pyæmic abscess (for Wilks and Moxon state that they have never known a pyæmic abscess to be so large as to become the object of special treatment, and it would be quite as large as the very rare one that Murchison[6] recorded on account of its size, and which contained nearly a pint of pus), but also that if one of the pyæmic abscesses is very large it is usual for some others to be large, and for there to be all sizes, down to the very small. For instance, in Murchison's case the other abscesses are described as being of the size of hazel-nuts and walnuts. You will notice that in the specimen before you there is one huge abscess, and that all the others are no bigger than small peas, and, further, that these minute ones are clearly, from their size, quite recent; but we know, from its size and from the history, that the large one is probably at least a month old. I am afraid, therefore, that I cannot give a definite opinion as to which of the two views is correct; but, at any rate, the case is one of extreme interest, and must make us all think, and therefore it is more useful to us than one in which the diagnosis is easy.

ON THE FEATURES WHICH DISTINGUISH EPIDEMIC ROSEOLA (ROSE RASH) FROM MEASLES AND FROM SCARLET FEVER.[1]

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NOMENCLATURE.

THE disease which is to be the chief topic of consideration to-day is said[2] to have been known to the Arabian physicians under the name of "Hhamikah"; but there is not much record of its existence until the early part of the last century, when it was known by the name of "roseola," subsequently it was termed "epidemic rossalia," and I think I shall produce sufficient evidence to show the expediency of reverting to this nomenclature. Little, however, was heard of it until the middle of the last century (1758), when the Germans described it under the name of "rubeola." In the middle of this century it seems to have started a new life in Germany under the name of rötheln, which we, unfortunately, have translated by the popular name of German measles. Scarcely any word, I think, in medical language has created so much confusion in relation to diseases at school as the word "measles," for it involves inconceivable difficulty by the confounding of three distinct diseases—rose rash, measles, and scarlet fever—under one name. This confusion has arisen not only from the vagaries of the disease which I have termed "epidemic roseola," and not only from inherent difficulties in diagnosis by reason of its close resemblance to measles as well as to scarlet fever, but largely through an incorrect nomenclature, in consequence of which this disease is commonly termed German measles, or, briefly, measles. The result has been that English measles is confounded with German measles, and German measles with scarlet fever. The defects of the current nomenclature will be readily inferred from the subjoined table:—

Technical term.	English name.	Popular name.
Rubeola. Morbilli.	English measles.	Measles.
Rubeola. Rötheln. Epidemic roseola.	German measles.	Measles.
Scarlatina. Febris rubra.	Scarlet fever.	Scarlet fever.

It is my earnest desire, through the influence of the Medical Officers of Schools' Association, to induce the medical profession to terminate this confusion, and to adopt for this disease the technical term of "epidemic roseola," and the popular name of "rose rash"; by this alteration, as I shall point out, we shall not only properly diminish the prevalence of these three zymotic diseases, but also ensure our professional credit by greater accuracy in our work. The mistakes produced by this defective nomenclature are both numerous and exasperating in the face of an epidemic at school, where the accommodation for quarantine, and subsequently for isolation, must always be scanty. Moreover, the errors will be found to have been wholly unnecessary as soon as the confusion is removed by adopting a proper term which does not require to be prefaced by a distinguishing adjective. The two diseases, again, are not varieties of the same species, but are perfectly distinct, however similar they may sometimes appear in certain of their characteristics. The following examples will clearly illustrate my meaning: 1. Some cases of measles occur in the family at home during vacation, and the boy about to re-enter school, having already had the illness, is permitted to return to his boarding house after thorough disinfection at the sanatorium. Within a few days, however, he exhibits characteristic English measles, and it is ascertained on inquiry that his previous illness was German measles, which, of course, does not afford protection from English measles. In consequence of this error an epidemic is started in the school. In a paper published in THE LANCET[3] I have recorded some curious anomalies in the form of measles being followed by rose rash and *vice versâ*. 2. Some cases of German measles arise at school, and a boy suffers from headache and malaise. The school medical attendant, in order to avoid wasting his very scanty means of quarantine, refers to the "medical report" to discover the illnesses from which the boy has suffered, and, finding that he has already passed through the malady, leaves him unisolated. Then, to his chagrin, the boy exhibits signs of this illness, and it is ascertained that it was English and not German measles by which he had previously been attacked. 3. When it is affirmed that a boy has had measles twice it generally only means, of course, that he has had English and German measles.

LIFE HISTORY OF ZYMOTIC DISEASES.

The minute seeds of zymotic diseases enjoy their seasons of growth and development exactly as do all other vegetable seeds; and although individual seeds may grow out of season and thus maintain a disease, the main crop, in the form of an epidemic, will only develop in its appropriate season of the year, and then only when probably the meteorological conditions are favourable to its highest (or most virulent) propagation, precisely in the same way as the gardener speaks of a good plum year or a good apple year. These external conditions of environment also affect the host,

[6] Ibid., vol. xx., p. 213.

[1] A paper read before the members of the Medical Officers of Schools' Association at their meeting on Feb. 21st, 1894.

[2] Ziemssen's Cyclopædia of Medicine.

[3] THE LANCET, Oct. 29th, 1881.

who represents the soil in which the seeds are planted, and thus their development is aided or thwarted and the severity or mildness of an attack produced.

It is this law of seasons which accounts for the minor zymotic diseases—such as measles and rose rash—being epidemic only in the spring and summer, and for the major zymotic diseases—as scarlet fever and diphtheria—being epidemic only in autumn and winter. It is also this law of years which accounts for the presence or absence of epidemics in various years. Another fact is that each disease has its own characteristic seed entirely *sui generis* and no other, although these microphytes may bear some relation to saprophytes in their origin.[4] But a curious fact in the life history of these zymotic diseases, at present inexplicable, is that the growth of some germs in the body seems to produce so vital an alteration in the soil as to facilitate the immediate fertilisation and growth of the germs of other diseases. For example, the concurrence or sequence of measles and whooping-cough, of scarlet fever and diphtheria, and of measles and diphtheria is well known; and recently I have observed the marked influence which influenza has exercised upon the concurrent or subsequent development of influenza and epidemic roseola, and of influenza and mumps.

The question has occurred to me whether the type of rose rash which so closely resembles scarlet fever would tend in a series of cases gradually to develop into true scarlet fever; but I have never seen the slightest indication in this direction. I have always found, as soon as I knew my subject, that each disease bred true. There was a well-expressed line of demarcation between the two diseases, and notwithstanding their close superficial resemblance every case was either true rose rash or true scarlet fever. I no more believe in its indefinite distinction than I do in what are called diphtheritic sore-throats; either a disease is diphtheria or it is not. The difficulty lies in the accuracy of our diagnosis, and not in the definiteness of the disease; but nothing can be achieved without the capacity of accurate diagnosis, and there are no cases in medicine which at times are more puzzling, and require the expenditure of more thought and judgment, than the zymotic diseases we are discussing—rose rash, measles, and scarlet fever. In their elucidation they have entangled many of the ablest physicians, to our professional discredit and to the detriment of the welfare of schools. Yet they are as separable as typhus fever from typhoid fever. To mistake rose rash for measles causes infinite trouble, but to confuse rose rash with scarlet fever, as is constantly done, is a very serious error indeed, even admitting the difficulties of diagnosis; for if the patient be suffering from rose rash a period of isolation of from fourteen to twenty-one days is usually sufficient, notwithstanding its desquamation, while if the malady be scarlet fever a period of solitary confinement varying from forty-two to fifty-six days is required in accordance with our present knowledge. Conceive the significance of this difference in an extensive epidemic—an isolation of two-thirds longer time for each case of scarlet fever, of wholly unnecessary confinement, with all its attendant discomforts, loss of time, and pecuniary cost entailed for medical attendance, nursing, and isolation.

The difficulties may be gauged when errors are committed even by those who have seen a multitude of cases. It requires some courage, I admit, to suspend one's judgment and plead ignorance when a definite diagnosis is imperative. How much more courage, when one has made a mistake and called the illness scarlet fever, to admit that, after all, it is only rose rash. Having made the mistake myself even so recently as 1889, I can sympathise with those in a similar difficulty. In a group of cases which occurred in that year I fear that the headmaster of Rugby School must have credited me with much modesty of judgment or crass ignorance. One day I diagnosed the cases as scarlet fever, the next as rose rash, and so on for at least a week, until I finally declared in favour of rose rash. I trust, however, that I have now mastered the problem, though, perhaps, only until the next difficulty supervenes. It is in the hope of assisting others by recording my own difficulties that I am addressing you to-day. In the third edition of my work on "Health at School" I have discussed the question somewhat fully on account of its vast importance to our own credit and to schools. I have there shown by the argument of facts that rose rash is essentially a spring and summer disease, while scarlet fever is a disease of autumn and winter. Another feature in its history which may afford considerable assistance is the fact that in the same group of cases of rose rash some will resemble measles and others scarlet fever; but we never observe in the same epidemic of measles some cases resembling scarlet fever and other measles. The question has also occurred to me repeatedly whether, on account of its area, season, and non-fatality, the very extensive but non-fatal epidemic of scarlet fever which raged throughout the country in the autumn of 1892 and the spring of 1893 was not largely an epidemic of rose rash rather than one of scarlet fever; for it not only occurred to a great extent out of its season, but in both cases in which I was consulted by the headmasters of two schools at a distance from Rugby the epidemic proved to be rose rash and not scarlet fever.

With reference to the infectious character of these zymotic diseases it is too frequently assumed that when exposed to infection all who have not previously suffered will succumb. In certain seasons and in certain conditions of health the body, although at the most susceptible age, is safe from the attack of measles and at another season is susceptible. The same is true in the case of scarlet fever, as I can testify, for I lived at the Hospital for Sick Children in Great Ormond-street for nearly two years, and although we nearly always had several cases of scarlet fever on hand, some of them very malignant in character and rapidly fatal, and although I was frequently with these cases for hours together, I never contracted the illness; but a year after I had left the hospital I was seized with scarlet fever and failed to trace the source. What renders the human body predisposed to, or immune against, the attack of the exanthemata I am not prepared to say. At present we can only state facts and await their interpretation; but the wave of influenza which has passed over us during the last four years must have elicited much thought by reason of the way in which some individuals have escaped, while others have succumbed to every epidemic.

MISTAKES ARISING FROM FAULTY DIAGNOSIS.

The errors arising from defective diagnosis are many and various: (1) Measles is mistaken for rose rash, (2) rose rash is confused with measles, (3) rose rash is mistaken for scarlet fever, and (4) scarlet fever is confounded with rose rash. Measles, however, is never mistaken for scarlet fever, since it never assumes that particular disguise. In one epidemic of rose rash the whole of the cases will resemble measles. In another epidemic of the same illness every case will resemble scarlet fever, as occurred in an entire series of cases in the two schools where I was consulted, comprising sixteen cases at one school and twelve at the other. In another epidemic some cases will simulate measles and others scarlet fever; and here it is easiest to study the epidemic, for under these circumstances its character is unmistakable. Some time ago I had a series of cases of rose rash which all resembled the measles variety, and at the end of the term a certificate was forwarded to each parent informing him that a sequence of cases of rose rash had occurred. However, a few days after the boys had reached home the headmaster received a very indignant letter from one parent complaining that within a day or two of his son's return he had developed scarlet fever, and that the home physician had recommended the transfer of the boy to a cottage with a nurse, with a view to isolation for six weeks. I sent an explanatory letter to the headmaster for transmission to the parent. This evidently cleared away the difficulty, for the boy was released from confinement and returned to school at the appointed time; no expression of regret was deemed necessary. Now, if this event had occurred to the medical officer of a school soon after his appointment, we can conceive the unpleasantness of his position. The illustration enforces the necessity—where, at all events, rose rash is concerned—of great care and judgment being exercised by home physicians, before they condemn the diagnosis of school physicians; and even a suspension of judgment, pending an inquiry into the facts, might prove a commendable course of procedure. Another remarkable fact about rose rash is that, although (there can be no shadow of doubt about it, as the one affords no protection in respect of the others) it is a perfectly distinct disease from measles and scarlet fever, and although both varieties of rose rash may appear in the same epidemic, as I have shown, yet the measles variety, like measles itself, usually occurs in large numbers, while the scarlet fever variety, like scarlet fever itself, always occurs to a much more limited extent.

[4] Transactions of the Epidemiological Society, 1891: Dr. Louis Parkes.

It behoves us, therefore, who are so deeply concerned in the accurate diagnosis of this very puzzling zymotic disease, to ask ourselves the question: How is it that these mistakes occur? 1. The causes of errors in the diagnosis of this erratic disease lie in the fact that we generally are apt to endeavour to base our diagnosis too exclusively upon the appearance of the eruption alone, without devoting sufficient regard to the history, the incubation period, and the presence, or absence, of other symptoms, whereas these other elements should be primarily considered. Unfortunately, the eruption of rose rash occasionally resembles so closely that of measles, or of scarlet fever, that in certain stages, and in certain cases, no human being, who studies the eruption only, can possibly perceive the distinction. 2. Because the fact of a diffuse red rash, followed by desquamation, is so ingrained a prepossession in the medical mind as constituting an unmistakable evidence of scarlet fever; yet this notion is distinctly contrary to the fact, as I trust I shall be able to show. 3. Because the illness is slight and consequently cannot be scarlet fever, while its severity is assumed to be an unfailing indication of this disease. On the contrary, some of the slightest cases of serious illness I have ever witnessed have been those of scarlet fever, and it is a well-known fact that such cases frequently become fatal from want of requisite care; again, I have found an illness occasioned by rose rash to assume a very severe type.

I now proceed to detail the distinctive features between rose rash and measles and between rose rash and scarlet fever. This I can only do briefly by exhibiting the salient features of each disease. In thus recording them some critics will object that while I am describing one feature in one disease they have noticed exactly the same feature in the other disease. I grant it; but in reply I would point out that I can only deal with types and not with individual instances. And I add that one symptom does not establish a disease when there are several other symptoms which are not common to it, but are associated with the other disease. These diseases all possess their characteristic "smell," which is, when carefully observed, a valuable aid to diagnosis. The smell cannot be described, but it can be readily detected by expert olfactory nerves.

THE DISTINGUISHING CHARACTERISTICS BETWEEN EPIDEMIC ROSEOLA OR ROSE RASH AND MORBILLI OR MEASLES.

Epidemic Roseola or Rose Rash.	*Morbilli or Measles.*
1. *Premonitory symptoms.*—In many instances none; no headache; no vomiting; no catarrh; no cough, but frequent sore throat. If the attack be severe, some malaise, anorexia, and drowsiness will exist.	1. *Premonitory symptoms.*—Usually considerable malaise, headache, anorexia, vomiting, watery eyes, catarrh, and characteristic cough for about three days.
2. Its *season* is spring and summer.	2. Its *season* is spring and summer.
3. *The incubation period* is usually eighteen days, but with a range of nine to twenty-one days.	3. *The incubation period* has a range of seven to eighteen days from exposure. Rash appears on fourteenth day.
4. *The eruption.*—In the *measles* type this appears as minute *rosy-red* dots, not patches. It shows itself first behind the ears, and on the *scalp and face*, especially on the oral circle; from these situations it extends to the neck and chest, and gradually covers the entire body. The minute dots become larger and gradually coalesce, forming patches, of the bat's wing pattern, indistinguishable from measles.	4. *The eruption* appears on the fourth day from the commencement of the malaise and catarrh. It shows itself behind the ears in the first instance, then on the scalp and forehead, and gradually spreads all over the face, body, and limbs, forming crescentic blotches. The eruption is papular in character and *brick-red* in colour, and may gradually assume a blue-red tint, but it never assumes a bright *rose red*.
5. *Additional symptoms:*—	5. *Additional symptoms:*—
1. *Throat.*—The fauces look dry, with a dark motley red hue.	1. *Throat.*—The fauces are red and swollen, but differ from the fauces of rose rash.
2. *Eyes.*—The conjunctivæ are pink-red and suffused.	2. *Eyes.*—The conjunctivæ are very red, watery, with marked photophobia.
3. *Glands.*—The lymphatic glands throughout the body are enlarged, tender, and hard like peas—notably, the posterior cervical, the axillary, and the inguinal.	3. *Glands.*—Not usually affected. The posterior cervical rarely so, and then not markedly; but the bronchial glands are always enlarged.
4. *Desquamation.*—In the measles variety there may, perhaps, be a little branny desquamation, but frequently there is none.	4. *Desquamation.*—There is a little branny shedding of the epidermis, varying according to the intensity of the rash.
5. *Kidneys.*—Rarely affected, and then only with a transient trace of albumen.	5. *Kidneys.*—Not affected.
6. *Diarrhœa.*—Never.	6. *Diarrhœa.*—Very frequent.
6. *Sensations of illness.*—Even with a full eruption, as intense as in measles, the patient usually states that he does not feel ill, although there may be other indications to show that he is really ill.	6. *Sensations of illness.*—I have been repeatedly informed by strong, as well as by delicate, boys that they have never felt so ill in any illness. They continually suffer from delirium and complete anorexia, and lie quite prostrate.
7. *Tongue.*—Clean or slightly furred, never coated with a thick white fur, which peels on the fourth day.	7. *Tongue.*—Slightly furred but not coated.
8. *Pulse.*—Normal, or slightly increased in frequency, but always bearing a ratio to the temperature.	8. *Pulse.*—Usually accelerated, and may be very feeble and dicrotic, but always bearing a ratio to the temperature.
9. *Temperature.*—Varying from normal to 103° or 104° F.	9. *Temperature.*—Usually heightened from 101° to 104° F.
10. *Course of illness.*—The symptoms, however severe, pass off in a few days.	10. *Course of illness.*—Convalescence more protracted, often considerable prostration.
11. *The duration of infectiveness.*—From ten to fourteen days where efficient disinfection is in force.	11. *The duration of infectiveness.*—From fourteen to twenty-one days, according to the severity of the illness, where efficient disinfection has been carried out.
12. *Protection.*—The attack affords no protection against measles.	12. *Protection.*—The attack affords no protection against the scarlet fever or measles variety of rose rash.
13. *Sequelæ.*—Practically none.	13. *Sequelæ.*—Pneumonia, bronchitis, pleurisy, ophthalmia, otitis, &c.
14. *Termination.*—Usually complete recovery in a fortnight.	14. *Termination.*—Usually complete recovery in a fortnight at the school age; but sometimes followed by a prolonged period of ill-health.
15. *Treatment* in both cases is very similar.—The patient requires about five days in bed, followed by three days in-doors, then about six days in the fresh air, and, after complete disinfection, may safely mix with others.	

It must be noted that abortive cases of roseola are frequent, and their occurrence difficult to detect.

There are also two other eruptions which have a close resemblance to that of epidemic roseola: the one is *roseola simplex*, which arises in hot weather, after chill, or as the product of various indigestible articles of diet. It is readily distinguished, however, by the absence of enlargement of the lymphatic glands. The other eruption is that occasioned by handling *caterpillars*, which boys are very fond of keeping.

I discussed this question fully in a paper in THE LANCET in 1881.[5]

I may also mention a medicinal eruption occasioned by copaiba, which Mr. Hutchinson called the morbillio sine catarrh.

THE DISTINGUISHING CHARACTERISTICS BETWEEN EPIDEMIC ROSEOLA OR ROSE RASH AND SCARLATINA OR SCARLET FEVER.

Epidemic Roseola or Rose Rash.	*Scarlatina or Scarlet Fever.*
1. *Premonitory symptoms.*—In many cases none, even where there is a copious eruption; neither headache, nor vomiting, nor catarrh, nor cough, but frequently sore-throat.	1. *Premonitory symptoms.*—Usually malaise for a few hours, and frequently vomiting. If the attack be slight the patient only feels tired, but usually complains of some amount of sore-throat.
2. Its *season* is spring and summer.	2. Its *season* is autumn and winter.
3. *The incubation period* is usually eighteen days, but with a range of from nine to twenty-one days.	3. *The incubation period* is from two to three days, with a range from a few hours to seven days; it very rarely extends beyond the fifth day.
4. *The eruption* is usually the first noticeable symptom, and will cover the whole body with a considerable rash in a very few hours. It has a bright *rosy red* hue, is raised somewhat from the surface of the skin, and often occurs in patches, with well-defined edges. The sensation of heat of the skin to the touch, even where the rash is very full, is much less than in scarlet fever.	4. *The eruption* is diffuse, *dusky red*, papular in character, and appears first behind the ears. It presents a *goose-flesh* appearance. No isolated dots at any stage, or patches raised and with well-defined margins. It appears early about the clavicles and on chest and the covered parts of the body. Not so full as in epidemic roseola and markedly hot to touch.
5. *Additional symptoms:*—	5. *Additional symptoms:*—
1. *Throat.*—The fauces are usually reddish, but bear little relation to the extent of the rash.	1. *Throat.*—The appearance of the fauces may vary from the most insignificant affection to an intense dusky redness, with marked swelling, showing sometimes white spots of inspissated secretion; and the severity of the throat affection bears usually a distinct relation to the skin eruption.
2. *Eyes.*—The conjunctivæ are pink and suffused.	2. *Eyes.*—Normal.
3. *Glands.*—The lymphatic glands throughout the body are enlarged, hard, and tender, and feel like peas. Those mainly affected are the posterior cervical, the axillary, and the inguinal.	3. *Glands.*—The lymphatic glands of the throat and neck can be scarcely detected during the first few days, but subsequently they may be enlarged *in proportion to the severity of the faucial affection.*
4. *Desquamation.*—In the scarlet fever variety the desquamation may be slight, or as complete as possible, even extending to a general desquamation of the hands and feet; but the desquamation bears no relation to the intensity of the eruption, for it often happens that a very full eruption may be followed by little or no desquamation, and what does occur is over in a week or two. On the other hand, a full eruption may be attended by a general peeling as free as in the worst cases of scarlet fever, but always in small scales rather than in flakes or sheets.	4. *Desquamation.*—The desquamation always bears a ratio to the extent of the eruption. A copious eruption signifies a free desquamation, while a scanty eruption is followed by a sparse peeling, which, however, does not cease for many weeks. *It commences invariably by a peeling of the tongue on the fourth day*, which extends to the lips and is followed by peeling of the face and behind the ears; one of the easiest places in which to detect it early is on the ears themselves. Desquamation is in shreds rather than scales and very free about hands and feet.
5. *Kidneys* rarely affected.	5. *Kidneys.*—Albuminuria very frequent. Acute nephritis very liable unless the treatment be appropriate.
6. *Sensations of illness.*—Where the eruption is slight there is no illness of any kind; and where the eruption is copious the *feeling* of illness is sometimes scarcely apparent, although I have seen boys really ill with it.	6. *Sensations of illness.*—In slight cases there is no apparent illness; but I have never seen a case with a severe eruption where the patient was not really, and also felt, very ill.
7. *Tongue.*—Clean or slightly furred, never coated with a thick white fur, which peels on the fourth day, leaving the tongue raw.	7. *Tongue.*—Coated with a thick white fur, peeling off from the tip and edges on the fourth day, leaving the "strawberry" tongue.
8. *Pulse.*—In slight cases normal, and where the case is a well-marked one the pulse is quickened, but bears a ratio to the temperature; that is to say, where the pulse is accelerated the temperature is raised to a proportionate degree.	8. *Pulse.*—Even in slight cases it is accelerated, and in severe cases very greatly quickened, and always out of all proportion to the height of the fever; that is to say, even with a temperature only just above normal (99° F.) the pulse will be very rapid (120).
9. *Temperature* varies from 98·4° to 103° or 104° F.; but even with a very extensive rash the temperature is not necessarily high.	9. *Temperature* ranges from 99° to 106° F., but never increased in the usual ratio to the pulse. A full rash always means a high temperature.
10. *Course of illness.*—The symptoms, however severe, pass off in a few days, leaving comparatively little feeling of illness. The glands continue enlarged and tender for about three weeks, and I have seen the submaxillary glands swollen. Desquamation continues for two or three weeks, or longer.	10. *Course of illness.*—The illness gradually subsides in from four to seven days. Desquamation commences as eruption fades, and continues for from seven to eight weeks or more, and lasts longest on the hands and feet.
11. *The period of infection.*—I do not know any illness which is so infectious in its earliest stage, even before any symptoms are manifest. It arises from this cause that schools suffer to such an extent when once it has found entrance. In its later stage, even while desquamation is taking place, it is not infectious beyond two or three weeks, after thorough disinfection.	11. *The period of infection.*—The least infectious of any illness in its early stages. After the first forty-eight hours it is very infectious, but how long the infection lasts I am not prepared to say. Until this can be ascertained the only safe rule is to assume that it may last as long as desquamation itself, although I am quite clear that this is inaccurate.
12. *Protection.*—The attack affords no protection against scarlet fever.	12. *Protection.*—The attack affords no protection against the scarlatina or measles variety of rose rash.

[5] THE LANCET, Oct. 29th, 1881.

13. *The duration of infectiveness.*—From ten to fourteen or even twenty-one days where efficient disinfection is in force.

14. *Sequelæ.* — Practically none; but I have seen the submaxillary glands enlarged.

15. *Termination.* — Usually complete recovery in a fortnight.

13. *Duration of infectiveness.*—From six to eight weeks or more — i.e., when the desquamation has ceased; but infection probably does not last so long after efficient disinfection.

14. *Sequelæ.*—Nephritis, suppuration of the submaxillary lymphatic glands and others, otitis, rheumatism, and endocarditis.

15. *Termination.* — Usually complete recovery, but sometimes a prolonged convalescence on account of the sequelæ; and the disease shows a high mortality in the very young.

16. *Treatment.*—Every case of scarlet fever, however slight, requires twenty-one days of lying in bed absolutely. The patient should be clothed in a flannel night-shirt, and the skin daily greased with carbolic or eucalyptus oil. No food should be given for the first week, except milk and farinaceous food, however slight the illness, for this helps to guard against nephritis. The patient should not be permitted to join his friends for six or eight weeks, but I do not think it essential to isolate cases until all desquamation has ceased *from the hands and feet*, for this process sometimes occupies several additional weeks. I have acted on this assumption for many years without harm, even transferring boys to their homes. Of course, complete and thorough disinfection is imperative. In roseola, on the other hand, the patient may be permitted to get up on the fifth or sixth day, or as soon as his strength permits, irrespective of the desquamation, and without danger from sequelæ. He then requires three or four days indoors, followed by five or six in the fresh air; and may safely join his schoolfellows at the end of from fourteen to twenty-one days, notwithstanding desquamation, provided the disinfection has been thorough.

It is this type of rose rash which, being mistaken for scarlet fever, accounts for the prolonged period of incubation which is assigned to scarlet fever by some writers; whereas it cannot be sufficiently emphasised that the period of incubation of scarlet fever is *usually* two days, *rarely* exceeds five days, and *never* seven days.

ON SO-CALLED "COLOUR HEARING."

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THE subject of this paper has for many years attracted considerable attention in Germany, France, and Italy, and more recently in America, but up to the present time practically no account of it has been given in this country, although its occurrence is far from infrequent. The phenomenon in question is one of a group, variously known as "associated sensations," "secondary sensations," or "synæsthesiæ," terms applied to sensations depending, not on the stimulation of the appropriate sense organ, but of some other. "Colour hearing" is the term applied to the special case in which a colour sensation is excited by some auditory stimulus, as, for example, by the pronunciation of the vowel sounds. Although, to those who do not possess this faculty, it may seem ridiculous to talk of sound being coloured, yet almost everyone has experienced the similar "associated sensation" of *feeling* sound. If a slate pencil be held vertically and drawn down a slate an extremely shrill squeak is produced, and coincidently with this there is an unpleasant shivering cutaneous sensation in the small of the back, commonly expressed by saying "one's blood runs cold." Another well-known "associated sensation" is excited in almost all individuals by the sound of a saw being filed, "one's teeth being set on edge." It is to be observed that these secondary tactile sensations, like the secondary sensations of colour, are not produced by any and every stimulation of the organ of hearing, but only by certain sounds. This faculty of *feeling* these two unpleasant sounds is one which is possessed by almost everyone, but the phenomena of "colour hearing" are experienced only by exceptional individuals, the most liberal estimate being 12 per cent., and in only a few of these is there any high development of the faculty.

The auditory stimuli which give rise to secondary colour sensations are mostly sounds which are mentally associated in series, such as the vowel sounds, the numerals, days of the week, months of the year, and musical notes. Colours are also excited in many people by the sound or thought of the series of letters of the alphabet. This is more common in my experience than colour sensation from vowel sounds. Although references were made by Hoffmann, Goethe, and others in the last century to the existence of this faculty the first accurate description was given by Sachs[1] in 1812. He published a most interesting account of the individual peculiarities of himself and his sister, who were both albinos, but who also possessed in a very marked degree the faculty of "colour hearing," which was most vivid in association with serial objects and least definite with the spoken vowel sounds. Little attention seems to have been paid to this publication. Isolated cases were published in ophthalmological and physiological journals, but interest was first generally excited by a paper which was read before one of the scientific societies of Vienna by Nussbaumer,[2] who gave an admirable account of the phenomena experienced by himself, and also by his brother, who was an accomplished musician. The paper was received in a very sceptical spirit, one eminent neurologist who was present expressing the opinion that the phenomena were pathological and allied to hallucinations, and that mental disturbance would sooner or later ensue. It is satisfactory to learn that his predictions remain unfulfilled. The subject was then studied by Fechner, who obtained a very large amount of information about it, but did not live long enough to complete his investigations. In 1881 Bleuler and Lehmann (the former of whom possessed the faculty) published the result of their inquiries among 596 individuals in Zurich, among whom 76, or 12·8 per cent, showed the phenomena under discussion with more or less distinctness. They described and analysed the results very minutely, and their paper aroused more general attention than had hitherto been given to the subject, and from this time onward its literature is abundant. The frequency of the occurrence of the phenomena has been independently investigated in this country by Francis Galton[3] and in America by Miss Calkins,[4] whose results agree in the main with those of the Swiss observers. The most extensive and exhaustive inquiry, however, is that just brought to a conclusion by M. Flournoy of Geneva, with the collaboration of M. Claparède, and published in his book "Des Phénomènes de Synopsie," which should be in the hands of everyone interested in this subject. Lastly, mention must be made of a remarkable paper published in 1892 at the Congress of Experimental Psychology by Grüber of Jassy, which will be afterwards referred to. My own attention was directed to the subject some years ago, and it occurred to me that it would be well studied in cases of acquired blindness, as those who possessed the faculty would be sure to have noticed it and to have paid attention to it, and hence able to give a clearer account of their sensations. By the courtesy of Dr. Campbell, principal of the Blind College at Norwood, and Captain Webber, R.N., secretary of the Blind College at Hampstead, I had the opportunity of investigating the condition of the inmates of those institutions. At Norwood I found eight who possessed this faculty and at Hampstead four. I have also met with many cases in healthy individuals. It will be convenient, in the first place, to describe in some detail a few well-marked cases and then to discuss the phenomena.

CASE 1. *Colouration of spoken vowel sounds.*—A heavy, undergrown youth seventeen years of age became completely blind four years before coming under observation. Before that he could see colours quite well. He could not remember when he began to associate colours with the vowel sounds and he never knew that it was an unusual faculty until he heard me make my inquiries about it. He said that when the vowel sounds were pronounced slowly he had accompanying each a sensation of colour "like a transparent

[1] Historia Naturalis duorum Leucæthiopium, 1812.
[2] Wiener Medicinische Wochenschrift, 1873.
[3] Inquiries into Human Faculty, London, 1883.
[4] American Journal of Psychology, 1893.

coloured sheet" a short distance in front of his face. These sensations used to occur before he lost his sight, but the coloured sheet never obscured, or gave its own tint to, any objects that might be in the field of vision. Each vowel sound had its own corresponding tint, which was always the same for that vowel. When the vowel sounds were uttered in rapid succession there was a confused, rapidly changing, faint screen of colour, but it did not obtrude itself on his consciousness, unless he expressly directed his attention to it. Thus the colour excited by *ah* was light blue, that excited by *eh* pink, by *ee* green, by *oh* white, and by *oo* light blue (with a metallic sheen on the surface). He had no colour associations with musical notes. With regard to the letters of the alphabet, he associated colour "in his mind" as he said, but did not see the coloured letters. In contrast to the unvarying tint of the colour associated with the vowel sounds, these alphabetical *imagined* colours were not quite constant. Thus he told me that "*b* was red last year, but now it is always blue." His visual memory was remarkably good. When he wishes to recall some event in his life at the time when he had his sight, the whole scene, he said, reappears vividly before him in all its details and colours. It fades, however, in half a minute and cannot again be recalled in this vivid pictorial form.

CASE 2. *Colouration of musical notes, of letters of the alphabet, numerals, months, &c.*—J. H——, twenty years of age, has been blind since he was five years old, but before that could see perfectly well. He has had these various secondary colour sensations "ever since he can remember." 1. He associates colour with the sound of musical notes. He has a definite colour sensation with each note of the octave, and there is even a distinction between notes which are represented approximately by the same ivory key on the pianoforte, such as C sharp and D flat, the "photism" (to adopt the term employed by Bleuler and Lehmann for the secondary colour sensation) for C sharp being that for C, somewhat brightened by being stippled with glistening white dots, while D flat gives rise to a photism rendered more sombre than that for D by being covered with large black dots. The photisms corresponding with the half-tones of the other notes are formed in the same manner. The colours are as follows:—C, blue; D, navy blue; E, bright yellow; F, brown; G, green; A, white; B, black. He has similarly a colour sensation corresponding to the key-note. Thus if a piece were written in E, he would experience a sensation of yellow all the time it was being played. He said there was a kind of background like a curtain, at some distance from him, of a colour corresponding to the key-note on which flit coloured streaks corresponding with the individual notes played. The notes are altered in brightness by being played in a higher or lower octave; but each note preserves its own colour, E and E sharp giving rise always to a yellow photism. If the colours associated with musical notes are compared with those excited by the alphabetical symbols, it will be seen that the note A and the letter A give rise to the same colour, and so on through the octave. (This correspondence does not exist in all cases.) 2. He also has very definite colour sensations when thinking of the letters of the alphabet or hearing them pronounced. The photisms are most vivid when the letters are thought of separately, but more feeble when the letters are combined into words. He seems to see the coloured letters "quite solid" about a yard in front of his eyes. The following are the colours excited:

A, White.	J, Red and black.	S, Dark grey.
B, Black.	K, Yellowish white.*	T, Light blue.
C, Speckled.	L, Black.	U, Greenish white.
D, Dark blue.	M, Bright brown.*	V, Violet.
E, Golden.*	N, Yellowish brown.*	W, Salmon.
F, Dark brown.	O, Clay coloured.	X, Yellowish white.
G, Green.	P, Bluish grey.	Y, White.
H, Light grey.	Q, Green and blue.	Z, Black with white and green spots.
I, Red.	R, Slate colour.	

* With metallic sheen.

3. He also associates colours with another series—the months of the year. It will be seen that the colours associated with the months are those of the most prominent letters. He said, however, that the colours were much more vivid than with similarly spelled words:—

January	Brown and white	A and U.
February	Black and brown	F and B.
March	Brown	M.
April	Dark grey	P.
May	White	A.
June	Light brown	J.

and so on. It will be noticed that this individual does not associate colour with the spoken vowel sounds. I pronounced the phonetic vowel sounds *ah, eh, ee, oh, oo* in a monotone, carefully keeping my voice at the same pitch. He had the usual photism corresponding to the note at which my voice was pitched, but the phonation of the different vowels had no effect. He said that there had been no variation in the tints excited as far as he could remember.

To recite other cases in detail would only be tedious. In the second part of this paper a table will be given showing the tints excited in a number of individuals. In my inquiries alphabetical associations were most frequent, and closely connected with them were the sensations excited by such serials as the names of the days of the week, months, and familiar proper names, the colour in such case usually corresponding with that of the initial or some prominent vowel. The photism excited by these special "serial" words is much brighter and more definite than that of the same word used in another sense—e.g., March, the month, gives a much brighter photism than march, the verb. In those persons who experienced photisms with the spoken vowel sounds, as well as with letters, there was seldom any resemblance between the photism excited by the spoken *o* and the written *o*. Many cases were also met with in which people arbitrarily associated colour with vowel sounds, letters, and musical notes, but in which there was no actual sensation of colour. These cases should be grouped with those, of which I have also met a good many, who associate physical and moral qualities with the letters and numerals, speaking of them as fat and lean, good-natured, spiteful, unselfish, &c. Some excellent examples are given by Flournoy.[5]

It is worthy of remark that musical notes and melodies are, both in this country and abroad, frequently spoken of in terms of other sensations. Thus we speak of a "sweet" song, of "soft" music, of a "sharp" note, and the name of the ancient instrument "dulcimer" shows that this custom existed as far back as the time of the Romans also. Many other secondary sensations (colour, tasting, smelling, &c.) are occasionally met with, but cannot be discussed within the limits of this article.

There are some special associated sensations which have been described by other writers which must be referred to. Pedrono and Ughetti have described cases in which each musical instrument excited its own tint. In another case which has been reported, that of an accomplished linguist, there was a colour sensation corresponding to that of the language in which the conversation took place. This is probably due to the predominence of some particular vowel sound in the words employed. Thus, for example, English conversation excited a grey colour sensation of the same sound as that produced by the vowel sound *eh* (*a*); German was black, corresponding to *ah;* Italian yellow, corresponding to *ee;* and so on.

It seems possible that this faculty (or something closely allied) may be excited temporarily in some people, either by the action of drugs or by strong emotions. Several instances have been given, but the most striking is that mentioned by Théophile Gautier in relating his Haschisch experiences:[6] "Mon ouïe était prodigieusement dévelopée, *j'entendais le bruit des couleurs.* Des sons verts, rouges, bleus, jaunes, m'arrivaient par ondes parfaitement distinctes. ..... Chaque objet effleuré rendait une note d'harmonica ou d'harpe éolienne." It is also related of St. Catherine of Siena that she had a bright red colour sensation whenever she saw or thought of the host.

(To be continued.)

RENAL INADEQUACY AND ITS TREATMENT.[1]

BY HASTINGS GILFORD, F.R.C.S. ENG.

RENAL INADEQUACY is defined by Sir Andrew Clark, who first described it, as a "state of the kidney in which it is unable, without material diminution of quantity, to produce a urine containing the average amount of solids and a specific gravity greater than 1014."[2] The main clinical features of this complaint are a greater vulnerability to disease and a lack of reparative power after injury. Hence there is proneness to

[5] Loc. cit. [6] La Presse, July 10th, 1843.

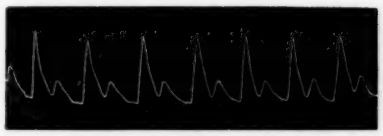
[1] A paper read before the Reading Pathological Society, Feb. 21st, 1894.

[2] THE LANCET, Nov. 29th, 1879.

catch cold on slight exposure, and to contract pleurisy, pneumonia, or pericarditis, and its subjects are apt to do badly after operations. From this it will be gathered that the affection is one rather of liability to disease than of disease itself. This, I believe, is true of the condition in its less marked forms; but in its severer aspects it exhibits such a group of characteristic symptoms as appears to constitute a true disease. It is a disease firstly of function and then of structure. The symptoms of the advanced disease are myxœdematous in type and consist of puffiness without œdema, harshness and dryness of skin, deliberate and somewhat difficult articulation, yellowish and swollen features with lips and cheeks of a bluish red, and the whole intellectual tone is subdued and slow. The facial appearance from one side resembles that of pernicious anæmia and from another that of chronic Bright's disease, though it differs from both.[3] Another feature of the condition is that its subjects usually have small appetites, but any increase in the food taken results in an aggravation of the symptoms and a diminution in the output of urea. "Stimulants" cannot be tolerated for the same reason; and even water, if drank in quantities larger than usual, while it causes no increase in the excretion of urine, is apt to cause an uncomfortable feeling of distension. Sir Andrew Clark pointed out that the treatment of these cases consists in protecting the patients from cold and fatigue, and in seeing that the largest amount of food is taken consistent with the greatest possible increase in the excretion of urea. The importance of Sir Andrew Clark's communication is great, for the complaint is common; it leads to a condition of chronic invalidism; it is doubtless the indirect cause of much illness and of many deaths; and it is one for which drugs have hitherto been found useless. Yet this condition has apparently received very little attention. One reason, doubtless, for this apathy is to be found in the fact that, unlike its congener myxœdema, it is an affection which usually exhibits no striking features. The subjects of it are usually women of middle age, with flabby muscles and of a dreary and dispirited aspect, who come to us again and again for the treatment of slight ailments. They are commonly regarded as invalids who think too much of themselves and of their "fads" in regard to medicine and diet. They are so careful to shut out draughts from their rooms that we think the reason for their catching cold so readily is that they have become "delicate" as the result of their extreme dislike to cold air. Their friends are prone to complain of their very poor appetites, and to ask for "strengthening medicines," or tonics, which do them no good, but, on the contrary, are, as a rule, positively harmful. Indeed, they seem never to tire of taking medicine, and though they often speak of the good it does them, we ourselves can see no evidence of it. Patients with renal inadequacy, in short, are too often regarded as cases devoid of interest, for they are unsatisfactory alike in their symptoms, in their prognoses, and in their treatment. It is evident that there is a very close resemblance between renal inadequacy and some forms of chronic Bright's disease without albuminuria. This resemblance is especially shown in the diminution of urea, the liability to inflammation of the serous membranes and the respiratory tract, in the tendency to succumb after operations, and in the simulation of myxœdema or pernicious anæmia. Indeed, Dr. Stewart of Philadelphia[4] describes a form of Bright's disease, which he says is probably of common occurrence, in which not only is albumen absent from the urine and the nitrogenous excretion lessened, but cardio-vascular changes are absolutely undetectable. It differs, however, from the cases of renal inadequacy that I have seen, inasmuch as the pulse tension is high, eye changes are present, and casts can be detected in the urine. Dr. Fagge has drawn attention to the fact that the character of the pulse in renal inadequacy has not been recorded; while in the only case in which the report of a necropsy has been given the most that was said on examination of the kidneys was that they revealed no sign of disease, but no microscopical examination was made.[5]

In the following case I had the opportunity of making a post-mortem examination.

CASE 1.—The patient, a married woman of sixty-three, had for twenty-six years been a chronic invalid, unable to work, and apt to catch cold on slight exposure. For fifteen or sixteen winters successively she had been laid aside for weeks or months together with bronchitis, pleurisy, or "congestion of the lungs," and during the summer months was often confined to her bed from the same causes for five or six weeks consecutively. She remained well-nourished up to within four years of her death, but when I first saw her, in May, 1891, she was thin almost to emaciation, and her muscles were flabby and the skin harsh and dry. Her cheeks had a pinkish flush and her hair was coarse and scanty, but the thyroid was of average size and there was no puffiness of the eyelids or extremities. The tongue was red and clean, and the bowels were alternately relaxed and constipated. There were no eye changes, and the knee-jerks were slightly exaggerated. She had occasional frontal headaches with giddiness and suffered frequently from aching across the loins. The temperature varied between 97·2° and 98·6° F., and the pulse between 98 and 110; the latter was regular and of a character well shown in the appended tracing, which was taken at a 3 oz. pressure.



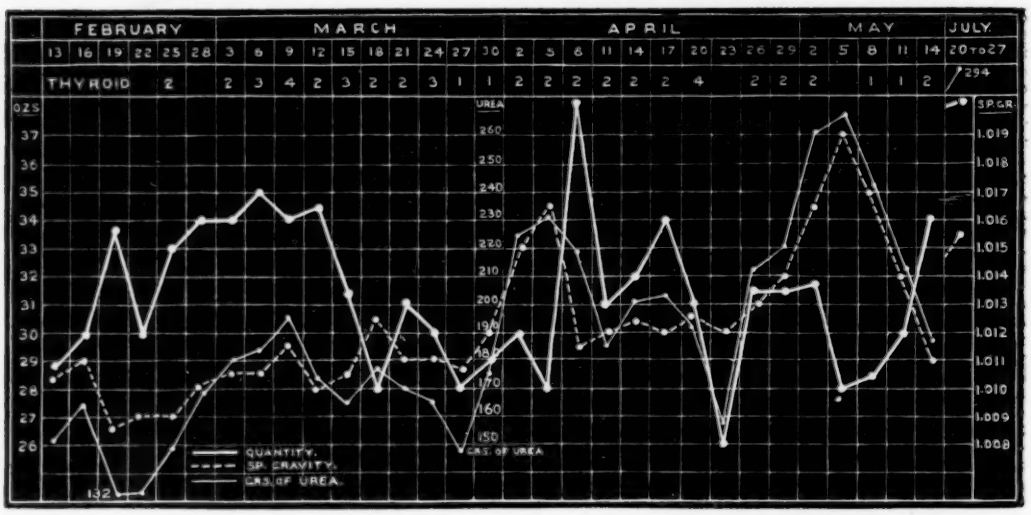
The heart's dulness was increased, the apex beat being best heard in the sixth interspace, four inches and a half to the left of the sternum. A presystolic murmur of medium intensity was present at the apex, and the other sounds were indistinct. She expectorated about six drachms of mucopurulent, frothy fluid. The chest was imperfectly resonant in every part. The breath sounds were harsh at both apices, and a few submucous râles and occasional rhonchi were heard here and there all over the lung area. Her urine, which was first systematically examined on ten occasions between May 20th and July 4th, 1892, averaged 38 oz. during the twenty-four hours, was of a specific gravity of 1008·5, and contained 188 grs. urea, the daily quantity of urea excreted varying very little from the average, though the amount of urine passed varied greatly on different days. It was faintly acid, and contained no casts and not even a trace of albumen. There was much soreness of the external genitals after micturition. As she ate but little I began treatment by prescribing a more liberal diet, but the onset of dyspeptic symptoms and diminution in the specific gravity of the urine necessitated a return to the old dietary. After giving her in turn acids, alkalies, bismuth, and other drugs without good effect, I tried daily massage, with gradually increasing diet. This was persisted in for nearly six weeks, because she insisted that it did her good, though the only effect noticeable to me was that she became slightly thinner, and the specific gravity of the urine gradually fell to 1006. On Aug. 1st, 1892, all treatment was stopped, but she continued to become progressively weaker; her temperature rose to between 99° and 100·5°, she expectorated greater quantities of frothy sputum, and the respirations became more frequent and laboured, though the chest sounds were not materially altered in character. She then became sleepless at night and on Aug. 18th insisted on getting out of bed for the relief of her breathing, and died shortly after she had returned to it.

Necropsy.—Ten and a half hours after death rigor mortis was slight. The blood coagulated very imperfectly, containing only a few small broken-down clots. The heart was somewhat soft and dilated, but not apparently hypertrophied; it weighed 13½ oz.; the valves were normal and no atheroma was present. Both pleuræ were firmly adherent, with old adhesions to the chest walls in all parts, except at the base of the right lung. The lungs were of a light, mottled colour, œdematous throughout, retaining their shape and giving out a frothy mucus when squeezed. The right lung was consolidated with chronic pneumonic products almost in its whole extent, with pus oozing from its tubes. The base of the upper lobe was also solid, and a few nodules were present here and there in the lung tissue for 1½ in. above. The kidneys weighed 3¼ oz. and 3½ oz.; they were smooth, and the capsules stripped off readily, except at one spot in each kidney to the extent of ¼ in. The kidney tissue was apparently healthy except at the seat of these patches, where it was lighter than elsewhere. Microscopical examination showed normal kidney structure throughout except in the areas beneath the adherent capsules, where there were changes indicative of old infarction. The liver was congested. The spleen was normal. The supra-renal

[3] THE LANCET, Nov. 29th, 1879.
[4] Brit. Med. Jour., Oct. 19th, 1893.
[5] Ibid., 1883, p. 345.

capsule was normal on one side, the other side was not examined. The brain was normal. The thyroid weighed 10 drachms and appeared healthy.

CASE 2.—The next case of renal inadequacy occurred in a widow of fifty-seven, whom I first saw in December, 1891, and who imputed her complaint to the fatigue of nursing her husband during his last illness two years previously. She first came to me for bronchial catarrh, which afterwards developed into mild bronchitis. She said she had been subject to similar illnesses since her husband's death. She had never had pleurisy, but had suffered from rheumatic fever eighteen years before. I saw her on several occasions during the next two years, and my note-book contains a record of frequently recurring coughs, bronchial catarrhs and mild forms of influenza, pleurisy, bronchitis, and pneumonia. She was acutely sensitive to draughts, and any exposure to sudden change of temperature during the winter was almost inevitably followed by an illness of several weeks' duration. I was particularly struck with the smallness of her appetite, and found on measurement that her average daily food in the summer of 1892 was represented by 12 oz. of milk, 2 oz. of French beans, 1 oz. of meat, one thin slice of bread and butter, and a teacupful of milk pudding, with 10 oz. of additional liquid in the form of tea or water. In October it was 10 oz. of milk, 1½ oz. biscuits, 2 oz. of bread, 3½ oz. milk pudding, and one drachm of oatmeal. Notwithstanding the poorness of her dietary she did not become thinner, but her muscles were flabby, and her habits and disposition were mild and vegetative. There was marked tenderness all over the body, and she shrank from the gentlest pressure. The knee-jerks were exaggerated. There were constant and obvious tremulous movements of the tongue and of the head and hands, resembling those of senile decrepitude, with occasional twitching of the face, and the speech was slow and tremulous. There was also slight deafness of both ears and occasional dimness of sight, but the ophthalmoscope showed no eye changes. The skin was harsh, there was slight œdema of the ankles, and a dark rim was present under the eyes. The thyroid was apparently of small size. She did not sleep well, awaking every two or three hours during the night. The only pain she experienced was an aching across the loins, which was sometimes very severe, and occasional cramps in the arms and legs. During the winter there was always an occasional cough with expectoration of small quantities of purulent sputum, while submucous râles were present here and there in the chest. The percussion note at the right apex was never good. The pulse was 88, almost water hammer in character. An indistinct systolic murmur was to be heard at the base, with an accentuated second sound, and a presystolic murmur at the apex, and on some occasions a soft systolic murmur was also to be distinguished. She complained greatly of palpitation of the heart, which was always relieved by a few five-minim doses of tincture of strophanthus. Digitalis could never be tolerated, though it improved the character of the pulse and increased the excretion of urine, without diminishing its specific gravity. I first began systematic observation of her urine on April 22nd, 1892, on which date the specific gravity was 1003. Between this and Aug. 15th the daily average of twenty-two observations was as follows: Quantity of urine 36⅛ oz., sp. gr. 1008·4; and the daily average excretion of urea, as the result of twelve observations by Russell and West's method, was 158·4 gr. It was faintly acid, of a pale colour, and its odour was aromatic; there was no sediment, casts, or albumen. Of a few specimens kept for three months, those of the lowest specific gravity remained clear, but gradually darkened in colour and became neutral and more aromatic in odour, while those of a specific gravity above 1008 became still darker, but after two or three weeks gradually became ammoniacal. Various methods of treatment were then successively adopted, frequent observation being made on the urine to test their efficacy. Among them were massage, Weir-Mitchell's treatment, diminution of nitrogenous food, increase of nitrogenous food, diminution of liquids, and increase of liquids, but in every case with a result that was either negative or absolutely harmful, and the patient became gradually weaker and able to eat less. At the beginning of February, 1893, she had been in bed for four months, too weak to sit up for longer than a few minutes consecutively, when I began treatment with thyroid broth.

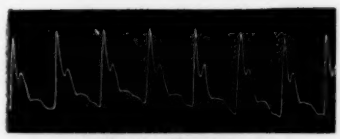


Fresh sheep's thyroids were pounded and the raw scrapings made into a broth at a temperature of 100°. This was given her in doses varying from two to six thyroids a week.

The effect on the urine during the first three months of this treatment is shown in the chart. It will be seen that, while the quantity of urine had not increased, the specific gravity had tended to rise, while the resultant of these two factors was shown in an unmistakable increase in the output of urea. The urine was tested daily for albumen, and from three to six times a week a quantitative estimation of the amount of urea was carried out by the nitrogen method. A daily record was also kept of the pulse-rate and of the temperature; but owing to the fact that in the chart the average of each consecutive three days has been recorded, the amount of urea has been roughly calculated by dividing the number of ounces of urine by half the last two figures of the specific gravity. In this way probably a more correct resultant is given than if the somewhat irregular observations were put down. Neither the temperature nor the pulse-rate has been included, for, while the former varied between 97·6° and 100·2°, and the latter between 88 and 152, the variations were so irregular as to render their record valueless. The irregular variations were, doubtless, mostly due to the mild form of pneumonia from which the patient was suffering. An inspection of the pulse-tracings shows a gradual and progressive improvement in the condition of the pulse during the time in which the record was

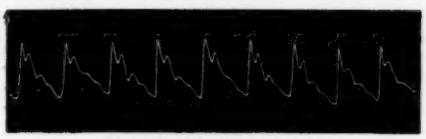
taken; but a tracing taken afterwards (Sept. 7th) shows a marked increase in tension. Indeed, the tension is so much greater that when it is taken in conjunction with the fact that two months ago a trace of albumen was for the first time detected with nitric acid in the urine it might lead one to suppose that the case is merging into one of Bright's disease. But against this view is the fact that observations of the quantity and specific gravity of the urine made subsequent to the days indicated in the chart show a considerable improvement in both quantity and density of the urine. The result of one such series of observations, made in July, has been appended to the chart. Still more satisfactory is the improvement in the general condition of the patient herself. This improvement set in from the commencement of the thyroid treatment and has been slow but continuous. In the middle of May, 1893, she was able to leave her bed, and on Sept. 10th she reported that she "was able to walk a mile and to eat more than she had done since her husband's death." At the end of January, 1894, when she was shown at a meeting of the Reading Pathological Society, she said she had never felt better in her life. She was much stronger, and though she did not

March 1st.—Three ounces.



April 20th.—Three ounces.

May 15th.—Three ounces.



September 7th.—Three ounces.

yet venture to walk out at night or in inclement weather, she had been free from illness since she left her bed nine months before. She is still slightly tremulous, but the heart dulness is no longer increased; the apex beat is normally situated, no murmur can be heard, and there is no accentuation or prolongation of cardiac sounds. The lumbar aching, the cramps, and genital soreness have also disappeared, and the specific gravity of the urine is 1021, and it contains no casts nor albumen.

I have also made irregular and imperfect observations on the effect of the thyroid treatment in the cases of three other patients whose urine was of low specific gravity and small in quantity. Two of these I believe to be instances of renal inadequacy, for their arterial tension was low, while their urine, when tested, has contained no albumen. The effect of thyroid feeding in both of these cases has been to slightly heighten the tension of their pulses and to increase the specific gravity of their urine, without diminishing the quantity excreted, and to improve their general health; but, though in one of these cases, as in those detailed above, the thyroids were given in large quantity without inducing unpleasant symptoms, in the other the results must be regarded as inconclusive owing to the insistance of the patient that she could not tolerate the treatment. After taking thyroid extract for a few days she declared it caused such a feeling of prostration that she had to give it up, and after I had again persuaded her to try it in smaller doses she again, and finally, abandoned the treatment. Unlike the other two patients, she was of a markedly neurotic temperament. In the fourth instance in which thyroid extract was given, though the pulse was not hard, the urine contained granular casts, and when tested invariably showed traces of albumen. Though the extract was given daily for nearly two months, it appeared to have no influence upon the excretion of urea, nor upon the condition of the patient herself. I have not yet tried the remedy in other cases of Bright's disease. But in another disease in which there was defective elimination of urea the extract appeared to be not only unsuccessful, but positively dangerous. This was a case of undoubted diabetes insipidus, under Dr. Abram. The disease was upwards of four years in duration, and the daily average of urine amounted to between thirteen and fourteen pints, while the specific gravity varied between 1000 and 1002, and never contained even a trace of albumen. On the morning of Jan. 4th the extract of one-third of a sheep's thyroid was given, with the result that in the evening she had eclampsic seizures, and retched and vomited frequently. On examination of the urine it was found that the specific gravity had fallen from 1002 to 1000, while its quantity had diminished by one-half. A quantitative estimation of the urea was not made before giving the thyroid extract; but on using the nitrogen test afterwards the amount of gas evolved was so small as to render calculation of the equivalent urea impossible by ordinary methods. The next day the specific gravity had again risen to 1002; but the urine contained less than 0 03 per cent. of urea, and its quantity was still diminished by one-half. The urine continued of this character for ten days, the patient meanwhile being in a drowsy condition but free from sickness or eclampsia. The heart in this case was apparently of normal size, and the pulse was rather soft than hard.

Though the above observations of the effect of the administration of sheep's thyroids in renal inadequacy were made from February to May, 1893, the first to call attention to the fact that the excretion of urea is increased by the use of this remedy were Dr. Ord and Mr. White, in a paper entitled "Clinical Remarks on Certain Changes observed in the Urine in Myxœdema after the Administration of Glycerine Extract of Thyroid Gland."[6] The same fact was also subsequently pointed out by Dr. Napier in a paper on "Diuresis and Increased Excretion of Urea in the Thyroid Treatment of Myxœdema."[7]

Since this paper was written the thyroid extract has been given in another case of chronic Bright's disease, with the result that after one month's treatment the specific gravity of the urine, which had remained persistently at or under 1010 for two years, has risen rapidly to 1017, while the pulse tension has diminished.

TRAUMATIC PANCREATIC EFFUSION INTO THE LESSER PERITONEAL CAVITY; ASPIRATION; RECOVERY.

BY J. LYNN THOMAS, F.R.C.S. ENG.

I HAVE adopted Mr. Jordan Lloyd's explanation of the pathology of one of the conditions known by the comprehensive term "pancreatic cyst," as I think it is the correct one for cases similar to the one under consideration. I followed up the subject of my case for eighteen months, but a few days ago I discovered that the street he lived in had been demolished, and consequently I am obliged to call the result a "recovery" and not a "cure," as the after-history of reputed cures of cases of a similar nature has clearly demonstrated a recurrence of the disease within a few months, and I think it is very desirable that such cases should be followed up for years, if possible, in order that our knowledge should be more trustworthy with regard to prognosis. The present case is of particular interest as an illustration of a method of treatment which has been singularly, if not uniformly, unsuccessful in other cases but this one, and I wish to draw attention to the age of this patient as a

[6] Ibid., July 29th, 1893.
[7] THE LANCET, Sept. 30th, 1893.

possible factor in aiding recovery. I have to thank Dr. Hardyman for his kindness in allowing me to publish and treat this case, and also Dr. Meredith Richards of Birmingham for most valuable help in the analysis of the fluid aspirated. I have on many occasions inserted a child's air balloon into the lesser peritoneal bag and distended it with water through the foramen of Winslow in the cadaver, and find that the area of dulness and percussion thrill is pretty uniform, and practically coincides with that found in cases like the one under notice. As the lesser peritoneal bag varies in extent and form in health, and is also modified in outline in disease and injury by inflammation, so we must expect slight variations in the physical outline and signs of a pathological or experimental distension of that cavity, and I append one diagram (Fig. 1) of an experimental distension of the cavity, as it shows the transverse colon in front of it, a condition stated by Mr. Jordan Lloyd never to be found in traumatic effusions into the lesser peritoneal bag. I think that it is hasty to dogmatise on such a point from the above experiment, and all possibilities of a pathological condition do take place if we wait and observe long enough.

A boy aged two years was admitted into the Cardiff Infirmary under the care of Dr. Hardyman on Jan. 4th, 1892, on account of being knocked down by a cab; the mother stated that the wheel rested on the child's abdomen. After admission he was somewhat collapsed for one day and vomited freely gastric contents, with a few streaks of blood; he was very thirsty; he had dyspnœa, chiefly inspiratory, and tenderness over the left lower ribs; bubbling râles were heard over the lower half of the left lung, probably due to its contusion or laceration. The abdomen was rigid and the knees were drawn up. From the second day after the injury he improved rapidly and was discharged apparently cured on Jan. 16th. On Jan. 25th—i.e., three weeks after the original injury—he was readmitted on account of an abdominal swelling and great loss of flesh. He was very thirsty, had no appetite, and the bowels were constipated. On palpation the abdomen was found to be greatly distended, tense, and tender, and the subcutaneous veins were congested. The measurements were: 5¾ in. from ensiform cartilage to umbilicus; 3½ in. from umbilicus to pubes; umbilicus at equal distance from the anterior superior iliac spines; circumference at umbilicus, 20 in.; circumference at midway between umbilicus and pubes, 18 in.; circumference midway between ensiform cartilage and pubes, 23 in. The abdomen was visibly enlarged above the umbilicus, and a tense tumour with a marked thrill on percussion occupied the epigastrium, the left hypochondriac and part of the left lumbar and of the umbilical regions. The position of the stomach and the transverse colon could not be ascertained. The area marked with parallel lines in Fig. 2 was dull on percussion, it had a distinct thrill, and it seemed to be immediately underneath the abdominal wall. A hypodermic needle drew off alkaline fluid with leucin balls in it, and Dr. Richards and I thought it to be probably pancreatic in origin. On Jan. 26th the abdomen was aseptic ised, a fine aspirator needle was introduced into the most prominent part of the tumour and the thinnest part of the parietes, and thirty-eight ounces of fluid were withdrawn. After this the child's appetite improved, the thirst disappeared, there was no abdominal tenderness, the general condition improved, and he was discharged with an apparently normal abdomen on March 17th—that is, fifty-one days after aspiration. During his stay in the infirmary there were no symptoms calling for remark.

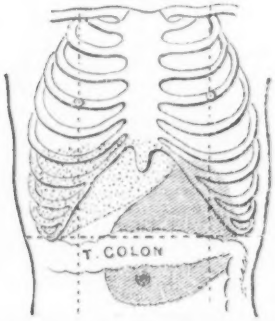
Characters of the fluid withdrawn.—The specific gravity was 1012, and the reaction was highly alkaline; the smell was mawkish. The colour was dirty bronze-green by reflected light and reddish-brown by transmitted light, and it was translucent up to one inch thickness. The taste was bitter and soapy. It was highly albuminous—chiefly alkali-albumen—so much so as to remain solid after acidifying and setting aside for twenty-four hours. It coagulated spontaneously after standing for twenty-four hours. It contained leucin, no tyrosin, and no other cellular elements. It had slight amylolytic action, a trace of sugar, and no trypsin. There was no trace of sugar or of albumen in the urine at any time. The fæces were normal whilst under observation.

Eighteen months after the accident the patient was in good health, well nourished and nothing abnormal could be felt in his abdomen.

Dr. Newton Pitt and Mr. Jacobson have published an exhaustive paper, entitled "Pancreatic Cyst successfully treated by Drainage,"[1] and a table of 30 collected cases, which are carefully analysed, and after perusing the same I find the following statement is made on page 467: "There is no evidence that aspiration can ever be curative." In the case which inspired the above-mentioned interesting paper the cavity had unfortunately refilled before the end of 1892. Since Dr. Pitt and Mr. Jacobson's paper many interesting cases of "pancreatic cysts" are recorded, but the most valuable contribution to the pathology of these traumatic cases is that of Mr. Jordan Lloyd,[2] in which he ascribes them to an accumulation of fluid in the lesser peritoneal cavity. It is necessary that the foramen of Winslow be obliterated before any large accumulation of fluid can distend this cavity, and it is by no means rare to find it so in post-mortem examinations of old people. If the foramen of Winslow was not obliterated the fluid would get into the general peritoneal cavity, which, by the way, has been the condition in some of the reported cases.

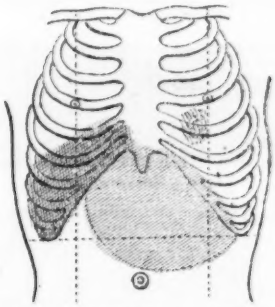
I would submit the following deductions from this case as worthy of record and as being probably true: 1. That aspiration in a young child in certain cases of traumatic effusion into the lesser peritoneal cavity is safe and likely to be as efficacious as other methods of treatment, bearing in mind the curative effect of aspiration in empyema and other pleural effusions in infants. 2. That by careful palpation over the tumour in the cadaver the empty transverse colon could be felt (Fig. 1), and in those rare cases in which the colon would be similarly situated the emaciation which always obtains would materially aid in detecting it. 3. The region

FIG. 1.



The area marked with parallel lines was dull on percussion and was due to distension of the child's air-balloon in the lesser peritoneal cavity with water. The transverse colon was in front of the fluid and could be felt through the parietes. The stomach was pushed up against the liver. Forty-six ounces of water were injected into the lesser peritoneal bag by means of the child's air-balloon.

FIG. 2.



The area marked with parallel lines was dull on percussion and had a distinct thrill. The dulness passed into that of the liver and of the heart.

[1] Transactions of the Royal Medical and Chirurgical Society, vol. lxxiv.

[2] Brit. Med. Jour., Nov. 12th, 1892.

of the stomach should and can be avoided. 4. The space between the stomach and transverse colon is considerably increased and with care will be pierced by the aspirating needle.

Cardiff.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

EXPERIMENTAL RESEARCH ON TRIKRESOL.

BY M. CHARTERIS, M.D. EDIN.,
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THE so-called "crude 100 per cent." carbolic acid is known to consist chiefly of cresols, which are, however, little soluble in water, owing to impurities of the nature of hydrocarbons, such as naphthalene and also pyridene bases. If these be removed a clear liquid of a pleasant odour results. This liquid, called "trikresol," is a mixture of ortho-cresol, meta-cresol, and para-cresol. It is soluble in water to the extent of from 2·2 to 2·55 per cent., its specific gravity at 20° C. (68° F.) varies between 1042 and 1049, and its boiling point lies between 185° and 205° C. (365°–401° F.). With the assistance of Dr. John Morton of Glasgow I commenced on Feb. 1st an experimental research as to its physiological action on guinea-pigs. As we were unaware of its exact physiological action, we began our experiments tentatively by injecting 1 minim into a full-grown guinea-pig. This caused no disturbance, and on subsequent occasions injections of 2 minims and 3 minims were found to be harmless. We now resolved to try 6 minims mixed with 25 minims of water, and to compare its action with pure phenol dissolved in the same quantity of water. The guinea-pigs selected for the experiments were full-sized and of equal weight. We give the results.

1. *Trikresol injection.*—This injection caused in seven minutes a backward movement, which was shortly followed by convulsions of the hind legs; afterwards the whole body was affected. They were not, however, severe, and in forty minutes they ceased, leaving the guinea-pig a little dull, yet when touched it moved readily.

2. *Pure phenol injection.*—This injection also caused convulsions, which commenced in the same manner and extended over the body. They were, however, somewhat more pronounced in comparison with those caused by the trikresol injection; in the course of an hour the guinea-pig recovered.

Neither of the injections was followed by an open sore, but a little hardness in the course of three days was detected at the sites of the punctures in the cellular tissue of the abdomen.

3. *Toxic dose of trikresol.*—We found that a twelve-minim and ten-minim dose of trikresol caused immediately severe convulsions, which became continuous and involved the whole body. From other experiments we came to the conclusion that a lethal dose of trikresol was from 7 to 8 minims.

Bacteriological experiments.—Experiments on micro-organisms instituted at the same time showed that trikresol is almost, but not quite, three times as powerful a germicide as pure phenol. An exposure of the staphylococcus pyogenes aureus to 1 in 20 of phenol invariably rendered the organisms sterile in two minutes and 1 in 60 of trikresol had the same effect; but in the shorter exposures the 1 in 20 phenol gave a greater proportion of sterile cultures than trikresol.[1]

Remarks.—It may therefore be concluded that trikresol is a three times stronger germicide than pure phenol, and that it is three times less toxic. Its advantages, consequently, for surgical purposes are very pronounced, and in all probability some combination of it with an alkaline base will in the future be prepared, which may with safety and with profit be administered internally in specific infectious diseases.

University, Glasgow.

[1] These experiments were done independently, at my suggestion, by Dr. MacIntyre and Dr. Thomson (assistant to Professor Macewen).

GUINEA-WORM AND ITS TREATMENT.

BY FELIX ROTH, M.R.C.S., L.R.C.P. LOND.,
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IT may be useful to medical men coming out to West Africa to know an easy and quick method for the treatment of guinea-worm. All the cases that have come under my care have occurred solely in the forearm and hand and in the leg and foot. I find that the burrows which this worm makes are generally parallel to the long axes of the limbs, and that they are found in the fleshy and subcutaneous parts. So far I have seen no case in the arm or thigh. I should also state that all my cases had been of some years' duration, that they have all been cured in less than a fortnight, and that in no instance has the disease recurred. All the worms removed have varied from eighteen to twenty-four inches in length, one being even longer. I adopt the following treatment. A long, grooved, blunt-pointed probe is passed along the burrow, and where it ends, or where the burrow takes a sharp twist or sinks deeply into the fleshy parts, the skin is nicked and the probe passed through. Then a sharp scalpel is drawn along the probe and the wound is laid well open. The superficial veins may be cut and, if necessary, ligatured; the large cutaneous nerves should, wherever possible, be spared. All the burrows should be treated in the same manner. Long strips of lint, soaked in carbolic acid lotion (1 in 15), are laid in the opened wounds. The whole limb is then surrounded with a lint compress soaked in the same carbolic acid lotion, covered with oiled silk and wool and tightly bandaged. Every twenty-four hours the limb is dressed and the guinea-worm is, as a rule, partly expelled on to the dressings; very often slight traction in the line of the burrow may draw it completely out. No force should be used, as it may easily be broken. After the second or third dressing the worm in every case came away. The limb should be well supported and raised, and a good purge is required. The patients told me that they suffered very little inconvenience under this treatment, although no anæsthetic was used. The patients under treatment were all natives of West Africa, who, as a rule, bear any sort of pain badly. Where I was unable to open the burrows with the knife I used compresses dipped in carbolic acid lotion (1 in 15). These applications either killed the guinea-worms *in situ* or forced them from their burrows; but this treatment took longer.

Oil Rivers Protectorate, Gold Coast, Africa.

SUPERNUMERARY MAMMA IN AXILLA, FORMING CYST; EXCISION; CURE.

BY ARTHUR NEVE, L.R.C.P., F.R.C.S. EDIN.

A KASHMIRI woman twenty-five years of age was admitted to the Kashmir Mission Hospital for the removal of a tumour in the left axilla. The swelling first appeared during the patient's first pregnancy five years previously; it was about the size of a hen's egg and had not grown since. The tumour to the feel was lobulated, and intimately connected with the skin, which was much pitted over its surface; the roots appeared to be deep in the axilla. The tumour was excised on Sept. 8th, 1893, and although it passed deep into the axilla it was unconnected with any glandular, nervous, or vascular structures. The bleeding was very slight. The skin over the tumour had to be removed with it. The wound healed by first intention throughout, and the patient was discharged on Sept. 15th. On section the tumour was found to consist of a congeries of convoluted tubes the thickness of a crowquill, out of which a thick yellowish substance, more resembling old condensed Swiss milk than anything else, could be squeezed. There could be no doubt of its nature—a lactocele occurring in a supernumerary but nippleless mamma. Curiously enough, a similar case was seen and the tumour excised by Dr. E. F. Neve only three months previously; but these are the only ones which have been seen here during the past twelve years.

Srinagar, Kashmir, India.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

MIDDLESEX HOSPITAL.

PERIPHERAL NEURITIS OF SENSORY NERVES OF INTEGUMENT OF THE BUTTOCKS, PENIS, SCROTUM, POSTERIOR SURFACES OF THIGHS, LEGS, AND OUTER SIDE OF FEET; SYPHILIS; IMPROVEMENT UNDER MERCURIAL TREATMENT.

(Under the care of Mr. HULKE.)

THIS case, whilst presenting a rough resemblance to the one published in THE LANCET of March 17th last, in the distribution of the anæsthesia, exhibits a strong contrast to it in the bilateralism of the anæsthesia and the discontinuity of the areas implicated, which were separated by tracts of sensitive integument and were not confluent in one large unbroken continuity. The circumstances of the distribution of the anæsthesia, of its insidious evolution unconnected with mechanical violence, of a distinct account of syphilitic infection, considered collectively, seemed to be more consistent with the supposition of a peripheral toxic neuritis than with a disorder of the spinal cord. That the stress of this should involve particular sensory nerves to the entire—or nearly entire—exclusion of motor nerves is not without analogy, but at present we cannot offer an explanation for it.

A man thirty years of age, of dark complexion, middle height, and spare muscular development, was admitted into Founder ward on Dec. 28th, 1893, complaining of pain when "at the closet." On examining his anus there were found a circular ulcer 5mm. wide, with undercut margins posteriorly, and two slight fissures anteriorly. He mentioned incidentally that a short time previously he had discovered, whilst rubbing himself dry after taking a bath, that the backs of his thighs "had no feeling." With this clue a careful examination into the circumstance was instituted. It revealed the fact that there was loss of sensibility of the surface, not only of the posterior internal surface of both thighs from the ham to the gluteal fold, but also above this in an area comprising both buttocks and the sacrum, the scrotum and the penis. Separated from this large upper anæsthetic region by a small sensitive transverse band at the bend of the knee there was an oval anæsthetic area corresponding to the upper part of the "swell" of the calf. Below this, and separated from it by a sensitive area, there was a longitudinal anæsthetic band over the tendo Achillis, narrow above at the origin of this tendon, widening inferiorly to the heel, whence it crept round the outer ankle, along the outer border of the foot, to the little toe, and also extended obliquely across the upper surface of the foot to the root of the hallux. The anæsthesia comprised insensibility to touch, to pricking with a sharp point, and to heat and cold tested by bringing into contact with the surface test tubes filled with hot water and with melting ice. The plantar, cremasteric, and patellar reflexes seemed to be normal. Deep pressure in the course of the sciatic nerve was painful. Dr. Wynter, who examined the electric reactions, reported that faradaic and galvanic irritability were well marked, and that there was no reaction indicative of muscular degeneration. The patient complained of severe pain in the course of the sciatic nerve and in the anæsthetic parts, particularly at night, preventing sleep. He walked clumsily, his calves seemed to be small for those of a person of his stature and of his calling, which obliged him to stand much, and the coarse test of withstanding movements he was asked to execute seemed to bring out some impairment of muscular power in the lower limbs. He could occasionally micturate, but he usually needed relief with the catheter. When this was used it was observed that the bladder had little expulsive power. He had had, he said, ten years previously a sore on the penis, followed by sore-throat, loss of hair, and a rash, and later by tingling sensations in his legs. Since the penile sore he had twice had gonorrhœa. For about six months before his admission into the hospital his bowels had been very constipated, and he had had gradually increasing difficulty in emptying his bladder. He began on Jan. 2nd a course of mercuric perchloride, and this, in a relatively short time, was followed by slight but distinct improvement in all the anæsthetic areas. By the end of one month the gain of sensibility to touch, to prick, and to thermal tests was so marked that on Feb. 1st his request to become an out-patient was acceded to.

YORK COUNTY HOSPITAL.

CÆSAREAN SECTION; MYXO-FIBROMA OF THE CAUDA EQUINA AND OTHER NERVES.

(Under the care of Mr. JALLAND.)

THIS case adds another to the list of Cæsarean sections which we published recently.[1] It differs from them in that an unsuccessful attempt had been made to deliver the child per vaginam after cephalotripsy, and therefore there was no chance of saving the life of the child. The death of the mother was due to purulent peritonitis. Although this is a cause for regret, still the condition of the patient, a subject of large and multiple tumours of myxomatous nature, was such that death must have ensued as a consequence of their increased growth and its effects before many weeks had elapsed. The necropsy shows the marked tendency of even innocent neuromata to become multiple. It is worthy of comment that there were no symptoms complained of by the patient which indicated the presence of these tumours. It is, however, possible that any pains which might have been the result of their growth were put down as part of the condition induced by pregnancy.

A woman aged twenty-four was admitted on April 20th, 1893. The patient, who was in labour, was sent in by Drs. Anderson and Nelson on account of an obstruction to labour. The patient was a primipara at full time. Labour commenced at 10 A.M. that morning, and Drs. Anderson and Nelson had been in attendance. She was admitted about 4 P.M. Her pains increased after admission. She had an opium pill before admission.

On examination by Mr. Jalland he found a prolapsed funis, and could also feel a mass in Douglas' pouch, apparently a tumour jammed between the presenting head and the bodies of the vertebræ. This tumour was soft and semi-elastic in feel. The crushed-up head could be felt with the tip of the finger, but not the fontanelle. The tumour was also felt per rectum. The patient had been in good health and had no previous knowledge of any growth. The forceps and cephalotribe had been used by Dr. Anderson before admission. After consultation Mr. Jalland decided to perform Cæsarean section. This was carried out at 4.45 P.M. On opening the abdomen a cystic tumour presented itself, which (although the catheter had been passed immediately before operation) was regarded as distended bladder. The catheter was again passed with some little difficulty on account of the obstruction, and the swelling was found to be a distended bladder. Before the uterus was opened it was drawn out of the abdominal cavity, and the incision, about eight inches long, made in its anterior surface. Through this the dead child and placenta were removed. Ergotin was given hypodermically, and the uterine walls were stitched up with silkworm gut. After the operation her pulse was good. She recovered from the chloroform about half an hour afterwards.

Notes on the case.—8.30 P.M.—Restless, pulse 120, temperature 99·4°, respiration 20. Some hæmorrhage from the vagina, but no clots.—11.30 P.M.: A quarter of a grain of morphia administered, but still a little restless. Morphia to be repeated if very restless. The catheter was passed at 10.15 P.M., but no urine withdrawn. Pulse 130, somewhat wavy. She complained of great thirst. Morphia was given again.

April 21st, 9 A.M.—The patient passed a fairly good night, and complains of no pain. The pulse as before. Temperature 101·2° at 6 A.M. Feels very thirsty. There is a little sero-sanguineous discharge. Says she has had no pain. Complained of some pain in the abdomen after an enema. Seen again by Mr. Jalland at 4.30 P.M., and was sleeping, but had been a little restless.

22nd, 1 A.M.—She had some hæmorrhage, and was ordered

[1] THE LANCET, Dec. 16th and 23rd, 1893.

ergotin if it continued, but it was not required. The hæmorrhage soon stopped, but she vomited, and again retched at 3.10 A.M., but nothing was brought up.—12.30 P.M.: A simple enema was ordered. The pulse showed somewhat high tension. Vomiting and hiccough were present. Temperature in the mouth 100·2°. She became quieter towards the morning and remained so all day. Seemingly quite well. No pains. About 7 P.M. she again became restless, and continued so for the first part of the night, though anxious to go to sleep.

23rd, 12.30 A.M.—Pulse 126. Breathing peculiar; very deep, but very infrequent; only 18 per minute. Somewhat restless. Pupils moderate in size. Had morphia injected at 1.40 A.M., and was quieter afterwards, sleeping at intervals varying from a few minutes to three-quarters of an hour. No perspiration; skin dry and hot. Has been troubled very much with flatulence during the night, and the annoyance continues this morning; there was also slight sickness with much retching, which passed off in the afternoon after she had a nutrient enema. The patient looks paler, but her lips are a good colour. She has been dozing quietly. Was fairly quiet through the night till about 4 A.M., when she woke up with a start, and became delirious and difficult to keep still. This restlessness increased during the day; there were short sleeps, and then she would wake up very excited. In the morning her breathing consisted of short inspirations and long expirations, and in the evening one long breath and several short ones. There was muscular twitching. Several morphia injections of a quarter grain were given, and one dose of bromidia at 9.10 P.M. She slept after a dose of half a grain of morphia. The breathing was only 6 to 8 per minute; after 4.30 A.M. 16 per minute, increasing at 10 A.M. to 32. At 12 there had been little sleep, and she was much weaker, with pale lips, eyes half-closed, and imperceptible pulse, and she gradually passed away.

At the post-mortem examination the external abdominal wound was not united, but there was no pus; a tumour was present in the right axilla about the size of an orange, firm and elastic to the feel; there was localised purulent peritonitis round the wound and on the anterior surfaces of the abdominal contents; the abdominal cavity contained about a pint of thin sanguineous slightly purulent fluid; the uterus was about eight inches in length and about five inches in breadth; there was no union between the edges of the wound; no tumour was found in connexion with the viscus; although reduced in size it did not occupy a pelvic position, but was found in the hypogastric and umbilical regions. The bladder was also abdominal in position. On removing the uterus and drawing the intestines upwards a large mass was found occupying the pelvis. In size the mass resembled a large cocoanut. It had a distinct capsule. The rectum was lying to the right side. Other tumours (*vide* infra) were seen higher up. The ovaries and tubes were normal. The tumour had an elastic semi-solid feel. It was attached to the sacrum by a broad base. On attempting to dissect away the capsule it ruptured and the contents were seen to consist of a cheesy mass, showing signs of hæmorrhage into its substance. Further examination showed that the tumour extended into the sacrum, especially into the foramina on the left side. The upper three foramina were enlarged; the bone felt soft and putty-like. The finger-tips could easily be inserted as the bony substance broke down under the finger. Another tumour was found on the left side, lying on the psoas muscle, having a few muscular fibres on it. In shape it was fusiform, being about the size of the fist. On dissection it could be traced upwards along the nerves forming the lumbar plexus. Nerves could be seen spread out on its surface. Downwards it was continued along the course of the anterior crural nerve, and in the thigh similar fusiform tumours were found on the nerve and one on a deep branch going with the profunda vessels. Each tumour diminished in size as one proceeded downwards, and the smaller tumours were almost cystic. Just below the brim of the pelvis on the left side there was another tumour which was lobulated and rather firmer than the former. It was in connexion with the upper sacral and last two lumbar nerves, and extended through the sciatic foramen as if in connexion with the sciatic nerves. On the right side there were three small tumours, each about the size of a walnut, connected with the lower lumbar nerves. The contents consisted of a gelatinous material. No nerve fibres were seen within the tumour. Higher up on the right side of the bodies of the dorsal vertebræ there was another fusiform tumour about the size of a walnut or small pear. The abdominal organs appeared otherwise to be normal. The right lung showed some pleural adhesions posteriorly; the apex was firmly attached to some mass. On removing the thoracic organs a lobulated mass about the size of an orange was found in the posterior mediastinum, lying to the right of the third, fourth, and fifth dorsal vertebræ. It was similar in character to those already described. There was another mass, the size of a walnut, lying on the body of the vertebræ, about the position of the attachment of the diaphragm. In the right axilla a tumour, fusiform in shape, the size of an orange, was found. It had the vessels and the nerves stretched over its surface. On tracing it downwards it was found to be continuous with and to spread along the side of the nerves of the upper extremity, and below it had several nodular masses along its course. Traced upwards under the clavicle similar masses were found in continuity with it, and probably continuous with the mass occupying the apex of the right lung. The kidney and spleen were normal; the liver was somewhat pale and yellow in colour, and a little soft to the touch. Portions of the liver and spleen were kept for microscopical examination, but were found to be normal. The lymphatic glands were nowhere found to be enlarged.

Microscopical examination.—The smaller tumours were evidently pseudo-neuromata—i.e., practically a myxoma in connexion with nerves. The larger tumour, the exact nature of which it is difficult to say, had probably merely undergone caseous degeneration. Cornil and Ranvier[2] give the only figure of tumours having the above character.

Medical Societies.

HARVEIAN SOCIETY.—A meeting of this society was held on March 15th, the President, Mr. GEORGE EASTES, being in the chair.—Dr. SAMUEL WEST introduced a discussion on Influenza in an interesting paper, which we shall shortly publish in full, and of which the following is a short extract. He described the onset of the disease, and showed how it might simulate even meningitis or cerebral hæmorrhage, and he laid stress on the "post-febrile depression," in which complications were very likely to arise. He referred to the presence of erythematous rashes, stating that they were not common when reckoned in percentage. The peculiarities of influenza pneumonia were discussed; it was atypical and asthenic, and cases were quoted of the broncho-pneumonic type, with hæmoptysis, which resembled phthisis. Dr. West said that influenza was a germ disease and therefore communicable, but not necessarily infectious—i.e., conveyed directly from the sick to the healthy. Instances of direct infection were recorded, but in the majority of cases infection did not follow. The disease might be communicated through the air. One attack of influenza gave no protection; indeed, it seemed as if one attack rendered a patient more liable to have another. Reference was made to treatment; no specific was known, but the most useful drugs were strychnia and citrate of caffeine. A discussion then ensued.—Dr. KANTHACK demonstrated pure cultivations of influenza bacilli on broth and on gelatine and agar-agar. He gave a short review of the history of the discovery of the influenza bacillus. It was highly probable that this bacillus was the cause of influenza, since it was always found in the bronchial secretion in influenza and never in any other affection. Experiments on rabbits and monkeys and horses led to no positive results; experiments on man had not been performed. Dr. Klein, however, possibly became infected while working for the Influenza Commission. He found the bacillus of influenza both in his blood and expectoration. It was not common to find the bacillus in the blood, and when present it was generally either dead or greatly impaired in vitality. On artificial media, at 37° C., the bacillus grew well; but it was very sensitive and short-lived, and had to be transplanted every fifth day.—Dr. KANTHACK also showed specimens under the microscope, and drew clear distinction between the bacillus of influenza and the streptococcus of pneumonia.—The PRESIDENT thanked Dr. West for his excellent account of the medical aspect of the disease, and Dr. Kanthack for his microscopical specimens of the microbe of influenza. He referred to the occasional difficulties of diagnosis, as shown in a case of a young woman that terminated fatally, in which post mortem universal cerebral meningitis was found, and

[2] Pathological Histology, vol. i., p. 159, Fig. 80.

that alone. At the outset of her illness the symptoms seemed to be those of influenza, though of an aggravated type; but eventually the symptoms of meningitis became paramount. In another fatal case, seen by him, there was for many days a rapid extremely feeble pulse. Pneumonia supervened, and the feet became quite cold and gangrenous about a week before death, which occurred on the eighteenth day of the illness. After death the main arteries to the feet were patulous. There was no embolism, and the gangrene was apparently due to the cardiac asthenia.—Mr. D'ARCY POWER hoped that some evidence as to the incubation period of influenza would be adduced in the course of the discussion. In his own case the incubation had twice been a period of eight days. On the last occasion he had vomited on Saturday night, but felt no after effects until the following Sunday week, when he was suddenly attacked in the ordinary manner. Mr. Power also referred to a case of influenza occurring in a child a few months after it had been vaccinated. The only surgical sequel of influenza with which he had met was teno-synovitis. This affection appeared to be more frequent in the last epidemic than in either of the previous ones.—Mr. W. SEDGWICK commented on the great tendency to death from failure of the heart's action in cases of influenza in old patients, and especially in those who had a strongly marked and constitutional tendency to gout. In such cases he had found successive doses of strychnia given by hypodermic injection a valuable remedy, which, of course, needed to be carefully watched, as it was often necessary in exceptionally grave cases to push it to the extent of producing distinctive twitchings.—Dr. W. H. LAMB stated that in an outbreak of influenza in a girls' school marked desquamation had followed some cases with a rash resembling that of measles, others that of scarlet fever, and also in cases where no rash had occurred.—Mr. CHIPPS LAWRENCE referred to two cases in which influenza was followed by and modified the course of typhoid fever. The duration of the fever was unaltered: the spots were smaller than normal, but were regarded as typical; the nocturnal rise in the temperature occurred. There was no diarrhœa. In one case three stools of a typhoid character were observed. In both the general character of the stools was abnormal, being dark. Both cases exhibited marked vital depression.—Mr. HAZEL said that he had lately had many cases of influenza occurring in pregnant women under his care. It seemed to exercise a most pernicious effect upon pregnancy, as it frequently brought on premature labour, and was also a cause of miscarriage. He had had two cases of typhoid fever which were at first mistaken for influenza. In another case diagnosed as influenza of the gastric type, which was removed to hospital for treatment, variola definitely manifested itself on the third day.—Dr. ST. CLAIR THOMSON considered that Dr. West's paper gave such a complete clinical picture of influenza that members could only supply additions by recounting exceptional cases not met with in daily practice. Referring to the interaction of this with other affections, he had seen the temperature assume an intermittent type (ordinary tertian) in those who had previously suffered from malaria. He had put on record[1] three cases of neuralgia of the heart after influenza, as they presented many points of interest. In one the neuralgia came on after a week's interval from the influenza attack; in another it preceded the fever of influenza; and in the third the manifestation of the two was simultaneous. The absence of several symptoms removed these cases from the category of true angina pectoris—viz., pallor, coldness, the feeling of the necessity of keeping still, increased pulse tension and arterial degeneration. In none was there any valvular lesion. In one case the cardiac pain was continuous for sixteen hours and then almost ceased; a few hours afterwards the patient suddenly fell back in bed and expired. He was aged thirty-nine, smoked on an average ten strong cigars a day, and his father had died from true angina pectoris at the age of sixty-one. With regard to Dr. West's remark on the effect of influenza in surgical affections Dr. St. Clair Thomson had seen some cases of suppuration of the accessory cavities of the nose apparently consequent on influenza. They differed from ordinary empyemata in the tendency they showed to spontaneous cure.—Dr. SEMON had put a similar personal experience on record. In the clinics of Politzer and Gruber it had been found that mastoid suppuration followed otitis media much more frequently after influenza than after ordinary catarrh. The anatomy of the parts concerned did not favour natural cure as in suppuration of the nasal sinuses.—Dr. WEST then replied.

[1] Brit. Med. Jour., May 21st, 1892.

HUNTERIAN SOCIETY.—An ordinary meeting of this society was held at the London Institution on March 14th, Mr. F. C. SYMONDS, President, being in the chair.—Dr. BRAXTON HICKS presented to the society a framed cast of Tassie's medallion portrait of John Hunter. The original portrait was "done from life" by Tassie in 1791 in wax and then in "Tassie's paste," a readily fusible opaque glass. An engraving of it appears as the frontispiece to the "new edition" of the "Treatise on the Blood: Inflammation and Gunshot Wounds," 1828.—The PRESIDENT showed a large Multilocular Fibroid Tumour of the Uterus, for which he had found enucleation an impossibility, and had removed the uterus and appendages. He had used the clamp, and the patient made a good recovery. He had had two similar cases; in one he had used the clamp, and in the other he had divided the cervix and had sutured the peritoneum over the stump. Both patients recovered.—Dr. GALLOWAY showed a specimen of Tubal Gestation which had ruptured half an hour before death. He judged the age of the gestation to be about two months. The patient died from hæmorrhage and shock.—The PRESIDENT then narrated a case on which he had been asked to operate. The patient had had three attacks of sudden internal abdominal hæmorrhage. Exploration was undertaken with a successful result. He remarked upon the early stage of the gestation, and asked whether in the experience of any Fellow of the Society tubal gestation in the lateral parts of the tube was more likely to rupture than one close to the uterus.—Mr. PERCY WARNER mentioned a case where there had been four attacks of severe hæmorrhage, accompanied by shock. The diagnosis was difficult; exploration was performed and the tube excised, the patient making a good recovery. A point of interest in these cases was whether the sexual appetite was lost after removal of the tubes.—Dr. HERMAN said he considered that it was undoubted that the gestation went on longer when the sac was situated in the outer part of the Fallopian tube. He could not see what a sudden intra-abdominal hæmorrhage in a woman who presented signs of pregnancy could be except a ruptured gestation or a ruptured varicose vein of the broad ligament. The treatment of both was the same.—Dr. F. J. SMITH mentioned a case of Ulcer of Stomach with mild typhoid symptoms. The patient was being fed up, and had just been made an out-patient, but returned to hospital with symptoms of perforation.—Dr. HADLEY mentioned a case of perforation in the fourth week of typhoid fever, with rapid death in collapse.—Dr. BRAXTON HICKS mentioned the case of an old woman who died in collapse from hæmorrhage, the necropsy revealing a varicose vein of a twisted ovarian pedicle. The above three cases were mentioned as illustrative of sudden collapse, followed by death, simulating the symptoms of ruptured tubal gestation.—Dr. W. ECCLES exhibited a cast of a Monoculous Fœtus; the pregnancy was the twelfth. The brain was reptilian in character, the cerebellum not being covered by the cerebral hemispheres.—Dr. HERMAN mentioned that in Ahlfeld's atlas Dr. Eccles would find a complete list and description of almost every known variety of malformation.—Dr. MANSON exhibited under the microscope the Blood of a Malarious Patient containing specimens of the organisms of malaria. The organism was delicate and did not bear transport. They were crescentic bodies, and stained with methyl blue; in the centre there were dark pigmented specks. He said the organism existed in several forms, the relations of which to each other had not yet been decided. Two forms were well known, the intra-corpuscular form, consisting of corpuscles with pale black pigment in the centre, exhibiting amœboid movement at the edge; another form consists of a central spherical mass of black pigment, to the periphery of which there are flagellæ attached. A third form consists of egg-shaped oval red bodies.—Dr. GALLOWAY asked Dr. Manson to explain his mechanical theory as to the reason for the crescentic shape.—Dr. FYFFE remarked that probably different forms of organism gave rise to different forms of ague, and would not the staining reaction of these parasites furnish a very good aid to diagnosis?—Dr. MANSON, in reply, said in any case if a thin film of blood diluted was taken the corpuscles then rested flat on the slide, and the parasite could not be overlooked. If the blood was thick rouleaux formed, and nothing but the edge of the disc was seen. The first thing noticed in the red corpuscles would be small black specks, the excrement of the parasite. The malarial parasite when near

maturity presented a disc with a piece of black pigment in the centre; if the parasite grows, the red cell buckles up and the crescentic outline is produced.—Dr. MANSON then exhibited microscopical specimens of Sputum containing Ova from a case of Pulmonary Distomiasis. He said the disease was common in China and Japan. The parasite lived in burrows in the lung substance and bronchial walls. The ova were deposited and coughed up in the sputum in myriads. The parasite gave rise to signs which simulated aneurysm, spasmodic cough, and sanguineous expectoration. He remarked that aneurysm was especially common in the East, as common as phthisis in London. Therefore in the East when an obscure case of thoracic disease was met with, with cough and sanguineous expectoration, with a history of acute hæmorrhage, the first diagnosis was always aneurysm, but the sputum should be examined in order to eliminate distomiasis. This distomiasis might affect the cerebral cortex, and give rise to typical Jacksonian epilepsy. The treatment of such cases surgically was possible.—Dr. GALLOWAY exhibited an Uncommon Form of Secondary Carcinoma from a patient who died from dyspnœa. Both elbow-joints were enlarged, and the lower ends of the humeri were involved in carcinomatous growths; in one arm there had been a spontaneous fracture of the humerus.—The PRESIDENT remarked that he had seen secondary carcinoma of the lung associated with tumour of the thyroid gland.—Dr. FYFFE exhibited a specimen of Thoracic Aneurysm with Ulcerative Endocarditis; there were patches of ulceration in the aortic valves in which diplococci had been found. He remarked that until micro-organisms were found ulcerative endocarditis ought not to be diagnosed.—Dr. CHAPLIN mentioned a case which he had exhibited where a huge vegetation on the pulmonary valve had caused death. He thought the valve affected was an important item.—Dr. FYFFE, in reply, said he thought about six weeks was the duration of life. He had once seen the tricuspid valve affected in a case of congenital heart disease. In one case of ulcerative endocarditis there was a residual abscess in the neck, from which, although opened with a sterilised knife, diplomucococci were cultivated. He thought, therefore, that residual abscesses were infective.

SOCIETY OF ANÆSTHETISTS.—At the fifth ordinary meeting of this society, held on Thursday, March 15th, at 20, Hanover-square, W., the President, Mr. F. WOODHOUSE BRAINE, being in the chair, communications were made by Mr. John Adams, Mr. Henry Davis, and Mr. W. Fingland (Liverpool), and discussed by the President, Dr. Dudley W. Buxton, Mr. Richard Gill, Dr. Hewitt, Mr. Henry Davis, Dr. Bridger, Dr. Silk, Mr. Ogle, Dr. Maughan, and others.—Mr. RICHARD GILL read a paper on the Relation of the Pupil to Anæsthesia, in which, after describing the characters of the various forms of pupil met with and discussing the meaning of the small and dilated pupils, he proceeded to advocate the maintenance of the small pupil throughout anæsthesia, reducing the amount of the anæsthetic given at stated intervals. He thought that the pupil was much influenced by the bodily condition of the patient prior to the operation, by perturbation of the stomach and by the shock of the operation.—Dr. HEWITT said that he could not agree that it was possible or advisable to work with a contracted pupil under ether; if this was done many patients would be found to be insufficiently anæsthetised. The great test as to the nature of any particular pupil was its behaviour in response to more or less anæsthetic.—Mr. RICHARD GILL replied.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—At a meeting of this society on March 19th, Dr. WOODFORDE, President, being in the chair, the question of Death Certification, with special reference to certain recommendations contained in the recent report of the Select Committee of the House of Commons, was discussed. The following were the recommendations: (1) that no death be registered except on a certificate of a medical man or a coroner *after inquest;* (2) that all cases not certified by the medical attendant be referred to a public medical certifier; (3) that the medical attendant, before giving a certificate, should personally inspect the body, or, if unable to do this, obtain the written attestation of the fact of death from two neighbours of the deceased; (4) that medical certificates should be forwarded by the medical attendant direct to the registrar; (5) that the use of a prescribed form of certificate be obligatory; and (6) that "attendance" during the last illness be defined as *personal* attendance on at least two occasions, one being within eight days before the death.—Letters were read from Sir Henry Thompson, Dr. Newsholme, and Mr. F. W. Lowndes expressing general approval of the recommendations, except that Mr. Lowndes dissented from Nos. 2 and 4.—Dr. EUSTACE HILL read a short paper on Death Certification by Unqualified Practitioners, of whom in his county of Durham there were an unusual number. In the urban districts 3·5 and in the rural 5·4 of the deaths were "uncertified," and in 1·9 and 4·6 per cent. respectively, in consequence of the attendants having been unqualified. In eight sanitary districts, with a population of 165,000, the uncertified deaths were 12·9 of the whole, and of these 11·9 were so from this cause. To this he ascribed, also, much of the excessive infant and child mortality. Taking the entire county, with a population of 745,000, the deaths under one year of age were 31·4 and under five years 47·5 per cent. of the total, the uncertified deaths being 49·8 and 66·8 per cent. of these respectively, and those uncertified in consequence of unqualified attendance 52·8 and 73·5 again of these. Some part of the mortality was doubtless due to insanitary conditions &c., for of the certified deaths of infants over 50 per cent. were referred to diarrhœa, marasmus, &c. The men, however, who did the largest practices were not even assistants *sine diploma* or chemists—they were miners, and like ignorant quacks. The alleged causes of death in uncertified cases, being accepted by the registrars, falsified the vital statistics of the country, and many cases of infectious diseases were concealed through the attendant not being entitled to notification fees, and so long as they did not pretend to be *registered* the law was wellnigh powerless, as the recent cases of the Indian oculists and others had shown.—Dr. FARQUHARSON, M.P., strongly supported the second recommendation as the essential point without which the rest would be of little or no avail. The only difficulty was the cost, whether it were met by the Imperial exchequer or raised by local rates. Many inaccurate certificates were given in good faith by medical men through want of diagnostic acumen, through reliance on the statements of the friends, or by the assumption that some long-standing disease had been the actual cause of death. Foul play had thus been concealed and insurance offices defrauded by false assertions. It was, therefore, highly important that the medical man should ascertain the fact of death for himself. Other professions, however, were not so closely guarded as was supposed, and in the present state of parties it was idle to hope for further legal restraints on medical practice.—Mr. NOEL HUMPHREYS (of the Registrar-General's office) maintained that medical certificates, under which 97 per cent. of deaths were registered, were open to great improvement, and coroners' inquests very generally gave either no cause or not the real cause of death; for unless this were accurately known what right had anyone to say that the death was due to "natural" causes? The medical certifier would decide, after a personal investigation, on what cases inquests should be held, and would then act as assessor with the coroner. The medical officer of health, if not engaged in private practice, might well be the certifying officer, and any reasonable remuneration would be amply defrayed by the saving of unnecessary inquests. He did not recommend the direct transmission of the certificate to the registrar, for secrecy was impossible, and the practice was found in Scotland to involve delay and other inconvenience.—Mr. LOVETT and Dr. SEATON agreed with everything that Mr. Humphreys had said, Dr. Seaton having, when medical officer of health at Nottingham, been practically assessor to the coroner, and saved many needless inquests.—Dr. S. DAVIS considered that the coroner's court was an anachronism, the functions of which would be better exercised by the medical officer of health and public prosecutor acting together. The medical officer of health and the superintendent registrar alike had to correct the returns of the sub-registrars, and he could see no reason why the offices should not be combined.—Dr. WILLOUGHBY had long advocated this combination of offices, since the revision of certificates could be properly performed only by a medical expert. The certificates given by qualified practitioners, some of which he read, needed careful revision no less than those of unqualified men, and, as he had shown in a paper he read at Nottingham, the Notification Act had led to evasive and unsatisfactory designation of diseases which should be returned as diphtheria and puerperal septicæmia. Replying to the President and Dr. B. Hill, who urged that in large towns and combined rural districts the medical officers of health could not possibly undertake additional duties, he said that the saving of fees for inquests, with the salaries of the present superintendent registrars, would permit of a readjustment of sanitary areas or the payment of assistant medical officers.

PROVINCIAL MEDICAL SOCIETIES.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Thursday, March 15th, the President, Mr. RICHARD FAVELL, being in the chair.—Dr. WATERS introduced a man aged thirty with Left Hemianæsthesia and Hyperhidrosis following an injury three years ago. There were no subjective symptoms, but there was complete analgesia and anæsthesia (extending to the accessible mucous membranes) all over the left side of the body. Reaction to heat and cold was indefinite. The special senses were affected as well, there being loss of taste on the left side of the tongue, deafness of the left ear, and a contracted visual field of the left eye. The reflexes were present on the affected side. The pupil dilated on pinching the left side of the neck, and the eyelid closed on touching the insensible conjunctiva. The left half of the body was constantly moist with perspiration, which became excessive on the least exertion.—Dr. PEARSON read the notes of a case of Excision of the Shoulder. The whole of the head of the bone and the top of the coronoid process was removed and the glenoid cavity scraped out. Though the patient had been losing flesh and unable to do any work for eighteen months before the operation he was able to do light work in two months after it, and in six months he had gained 2 st., and could lift considerable weights with the affected arm.—Mr. HELM showed a Syringe that could be readily and effectively sterilised, with which he was injecting Brown-Séquard's fluid for the palliative treatment of a case of cancer of the tongue too advanced for operation.—Dr. HARGREAVES showed a Cystic Growth which he had removed from the Breast.—Mr. FRANK HARRISON showed a Coryliser and read the notes of a case of Dental Replantation. A left upper central incisor which had been knocked out at the age of ten and immediately replaced was removed fifteen years afterwards by Mr. Harrison for æsthetic reasons. The general aspect of the tooth was healthy, and, strange to say, the central canal contained perfectly healthy normal pulp.—Dr. GWYNNE read the notes of a case of Embolism of the Pulmonary Artery occurring three weeks after labour.—The President, Mr. Atkin, Dr. Porter, Mr. Helm, Mr. West Jones, Dr. Hargreaves, Dr. Sinclair White, and Dr. Johnstone made remarks.—Dr. WEARNE CLARKE read a paper on Appendicitis.—The President, Dr. Gwynne, and Dr. Sinclair White joined in the discussion which followed.

Reviews and Notices of Books.

Cancer, Sarcoma, and other Morbid Growths considered in relation to the Sporozoa. By J. JACKSON CLARKE, M.B. Lond., F.R.C.S. London: Baillière, Tindall, and Cox. 1893.

THIS little book, which is the outcome of investigation and reading carried on in connexion with a series of papers read before the Pathological Society in the session 1892-93, will be useful to those who have followed the discussion on parasites in malignant disease, contributions to which have appeared in so many of the journals during the last year or two. This is especially the case, as the literature bearing directly and indirectly on the subject is not only scattered but is in some cases inaccessible. As might be expected in a work of this kind, much controversial matter is introduced, and most of those who read this book will feel, after a careful consideration of the numerous and useful diagrams and the descriptions given of them, that in many cases they do not bear out the interpretations placed upon them. This is especially the case in the part of the work dealing with cancer, for, although the author bases many of his most important conclusions on the observations on the appearances found in epithelioma, most of his illustrations deal with other forms of cancer; moreover, anyone who has worked at epithelioma knows how confusing are the appearances there presented and what remarkable modifications may be seen taking place in this tumour in those cells that are undergoing *horny* changes; and it cannot but be felt that the very large number of sporozoa described by the author as present in cancers and sarcomatous tumours must be the outcome of a too wide interpretation of the altered epithelial cells found, not only in them, but also in epithelioma.

This work, however, is a contribution of some value to the subject of the relation of parasitic organisms to malignant growths as showing the trend of mind of a large number of pathologists at the present day. Those who require a good, full literature and descriptions of accurate observations (mingled, however, with some that are crude) will find this an interesting and valuable little book. It is impossible to agree with much that the author has written, but we cannot but admire the oneness of purpose and idea with which he has set about and carried through his work.

An Outline of the Embryology of the Eye. By WARD A. HOLDEN, A.M., M.D., Assistant Surgeon to the New York Ophthalmic and Aural Institute. London and New York: G. P. Putnam's Sons. 1893. Pp. 69.

THIS little volume, which is the Cartwright Prize Essay for 1893, and is illustrated by a considerable number of drawings by the author, is stated to have been written at the suggestion of Professor Knapp, and to be based upon the examination of a large number of specimens from the chick and from the pig. The chick embryos were obtained by incubation, were hardened in Kleinenberg's or Müller's fluid, and stained with carmine and hæmatoxylin-eosin. The pig embryos were hardened in Müller's fluid after decalcifying when necessary with phloro-glucin or hydrochloric acid mixtures, and the sections were stained for the most part with hæmatoxylin-eosin. The description of the process of development is clearly given, and the author takes up independent views on several points—as upon the formation of the membrane of Descemet, which he describes as a secretion of the corneal endothelium, and upon the formation of the anterior and posterior capsule of the lens, which he holds to be a product of the epiblastic cells making up the lens sac. The illustrations, though a little rough, are intelligible and sufficiently elucidatory of the text.

Etude sur le Dermographisme. Par TOUSSAINT BARTHÉLEMY. Avec 17 Planches hors Texte. Paris: Société d'Editions Scientifiques. 1893. 8vo, pp. 293.

"DERMOGRAPHISM" and "autographism" are new names invented in France for the well-known affection urticaria factitia, in which the skin is so sensitive to local irritation that an impression made upon it by a pointed or other instrument is reproduced exactly in a wheal, and thus letters, figures, or the like traced on the skin stand out in relief in white characters with a pink areola. In THE LANCET of April 22nd, 1893, we published an interesting case of factitious urticaria, by Dr. J. Wilson Thompson, with an illustration. It would probably not have occurred to an English mind to write a rather large monograph on so small a subject, but it must be admitted that the author has given a very complete account of the disorder and has left little or nothing for other writers. Not the least interesting part is his historical references to the miracles and sorceries of the Middle Ages, from which he deduces that some of the stigmata, such as the impressions of the hand in relief on the back, which were regarded as impressions made by the devil, "griffe satanique," were really instances of dermographism in a high degree, the impression being produced by the back being struck with the open hand; a cross, which was regarded as a countersign—"la croix sacrée"—was also seen, and sacred names appeared written on the hand of Jeannes des Anges, the Superior of the Ursulines at Loudun from 1635 to 1662, but there were intermissions of the phenomena

There are seventeen reproductions of photographs of the marks and letters excited in various patients under the author's care, and the phenomenon comes out well in photography. There are numerous cases related, some of extreme instances, such as the production of a wheal wherever a kiss was imprinted on a young woman's face, and on the whole the author has given an interesting account of this rather unimportant affection. He regards it as a functional derangement of the vaso-motor nerves of the skin in a person who possesses a mobile nervous system and a rheumatic or gouty temperament, or, as he expresses it, "nervosisme et l'arthritisme."

Physical Diagnosis: a Guide to Methods of Clinical Investigation. By G. A. GIBSON, M.D., D.Sc., F.R.C.P. Edin., and WILLIAM RUSSELL, M.D., F.R.C.P. Edin. Edinburgh and London: Young J. Pentland. 1893.

THE compilation of a trustworthy manual of physical diagnosis, condensing without obscurity information on the subject and containing the most recent conclusions of greatest value, is a task which calls forth the highest teaching capacity and demands the exercise of a mature judgment. In a measure such works may be likened to translations of the classics or solutions of mathematical problems: they may be useful aids in the acquisition of information, but while using them the student should also for himself study the sources from which the information they contain is drawn. This would, perhaps, be too much to expect of the student of the present day, who even in a five years' curriculum has quite little time enough, but this fact renders a really valuable summary like this all the more wanted. After a careful perusal of this work we are of opinion that Dr. Gibson and Dr. Russell and their coadjutors may be congratulated on having produced a guide at once comprehensive in scope, lucid in style, and trustworthy in matter. The book is copiously illustrated with diagrams and accurate reproductions, some of the urinary deposits being coloured; the type is clear and conveniently varied; and the fact that there has been a demand for a second edition of the work proves that it has been appreciated.

Dwelling Houses: their Sanitary Construction and Arrangements. By W. H. CORFIELD, M.A., M.D. Oxon., F.R.C.P. Lond., Professor of Hygiene and Public Health in University College, London; Medical Officer of Health for St. George's Hanover-square, &c. &c. Third Edition, with Illustrations. London: H. K. Lewis. 1894.

THOSE acquainted with the previous issues of this excellent little work will be pleased to note that a third edition has been issued. In a clear and concise manner Dr. Corfield has explained all the conditions which are essential both in the construction and fitting up of a house to place it in a thoroughly sanitary and wholesome state. We think, however, that the subject of grates might with advantage have been dealt with more fully; for, with the exception of Galton's grate and Saxon Snell's thermohydric grate, which are not frequently met with in dwelling-houses, the grates ordinarily employed for the combustion of coal receive but scant notice. In every other way the book as a perfect *multum in parvo* should prove of service both to medical and lay readers. It is abundantly illustrated, many additions having been made in the present edition.

Medicated Baths in the Treatment of Skin Diseases. By LESLIE PHILLIPS, M.D. London: H. K. Lewis. Birmingham: Cornish Brothers. 1893.

IN a *brochure* of rather over 100 pages Dr. Leslie Phillips gives a good account of the indications for, composition of, and mode of using medicated baths—not those of spas—in diseases of the skin. The work is in three parts. In Part I. he takes a general survey of the subject, and states what is known as to the *modus operandi* of baths both in regard to temperature and the modifying influence of the added medicaments, and, on the whole, his remarks appear to be sensible and judicious. In Part II. the composition of the various kinds of baths is given, with general indications for their use. We notice a rather important omission of one variety of tar bath, that of Hebra, in which the patient is painted over with tar with a stiff brush and then soaked in warm water for two hours or more; a most valuable bath for very chronic eczema, prurigo, and some cases of psoriasis. In Part III. are discussed the diseases of the skin which can be advantageously treated by baths, and the baths which are most suitable for each. Without being, or claiming to be, original, the work is a reliable guide to those who require information on the subject.

LIBRARY TABLE.

Clark's Civil Service Annual, and Calendar for Candidates and Officials. Issued by Clark's Civil Service College. 1894. London: Civil Service Book Depôt, Chancery Lane, W.C.; Simpkin, Marshall and Co.; Eyre and Spottiswoode Edinburgh: the Darien Press, Bristol-place.—This is the first year of the publication of an annual which should prove of value not only to candidates for the various posts open to them by competition and by nomination in the Civil Service, but to the officials and all interested in the Government Service. In it will be found the various regulations affecting the constitution of the Civil Service, particulars of appointments and recent regulations, specimens of examination papers recently set, some examples of worked out examination papers, and other matter interesting to the aspirant. A synopsis of the Acts of Parliament, Orders in Council, &c., which regulate the main divisions of the service, and an alphabetical index of the permanent officials in the public offices of the metropolis, are also included in the issue. The book shows an earnest endeavour to follow out the intention of the compiler—namely, to make the annual a thoroughly useful one and to establish it as a reliable work of reference; but this standard of excellence will not be attained until a good index is added to the work. If this had been done in the present issue its utility would have been considerably enhanced.

Transactions of the Pathological Society of London, 1892–93.—This volume is somewhat smaller than its immediate predecessors, but the matter contained in it is none the less valuable. The usual arrangement of the papers and specimens under the headings of the various organs affected could not be improved upon; it affords the most ready means of reference, so that a glance down the first few pages of the book at once informs the reader of the particular subjects treated of. Amongst the most interesting papers are those on the Parasitic Micro-organisms in Cancer by Mr. Jackson Clarke, Dr. James Galloway, Dr. Armand Ruffer, Dr. Rubert Boyce, and Dr. Arthur Giles. Excellent drawings and photographs accompany the text, and the whole forms a most valuable series of communications on a subject on which so much light has recently been thrown, and which promises to yield important results for future treatment. Dr. Hebb likewise contributes a paper on Cancer-bodies, from a case of diffuse subperitoneal fibrosis. Another communication which will attract much attention is that by Professor Klein on anti-cholera inoculation. Other diseases not usually met with also formed the subject of discussion, such as Madura Disease of the Foot, introduced by Dr. R. T. Hewlett, illustrated with some excellent coloured drawings, and Preparations from the Organs of a case of West African "Black-water" Fever, by Dr. S. W. Wheaton.

PRESENTATION.—Mr. Frederick M. Blackwood, M.B. Durh., M.R.C.S. Eng., on his leaving Cooma, New South Wales, has been presented by the residents of the district with a silver tray and inkstand and a purse of sovereigns.

THE LANCET.

LONDON: SATURDAY, MARCH 31, 1894.

IT was in Rome, as we learn from Suetonius, that the professors and practitioners of the healing art were first vouchsafed the rights of citizenship—the enlightened act of that most enlightened of all absolutist rulers, CAIUS JULIUS CÆSAR. It is in Rome that the profession is marking another stage on its path to that still higher citizenship—the brotherhood of the nations, the citizenship of the world. It is, indeed, a reassuring and an ennobling spectacle to witness this assembling from the uttermost parts of the earth of the scattered legionaries in the perennial warfare against disease and premature death. Never in any European capital has so significant a reunion taken place. Not only every nationality recognised in Christendom is represented, but even races that are still slowly working their way towards civilisation. And their motive is one and the same. Truly, "a long result of Time," giving earnest of others still more momentous in the march of Evolution, until "all men's good" shall have become "each man's rule," and

> "The war-drums throb no longer and the battle flags are furled
> In the Parliament of Man, the Federation of the World."

Infinite are the moral lessons that may be drawn from this Congress and from its place of meeting. One is eminently this—never to despair of humanity. Forty years ago what section of Europe looked more hopelessly used up and derelict than the Italian Peninsula?—"that geographical expression," as it was cynically described by METTERNICH, one of the signatories of the Treaty of Vienna. Subsisting on a mighty past, its chief attractions for the outer world being the relics of its former achievements and the lovely Nature and climate which seemed to foster acquiescence in lethargy, Italy was the "Sleepy Hollow" of modern Europe, in which even the masculine races from the north, if their sojourn was prolonged, seemed to lose their virility. How changed the situation and the scene to-day. United and independent, enjoying free institutions and a parliamentary suffrage limited only by inability to read and write, Italy within the twenty-four years since she became enrolled as the fifth great Continental Power has proceeded from strength to strength, and if for a moment she suffers from the "recoil of her own principles," and is struggling with the difficulties that a more complex public life and a more involved international relationship impose upon her, it is indeed but for a moment, and even already she is working herself clear of her embarrassments and emerging the more virile and the more politic from the probation.

Happy for mankind are the occasions that evoke an efflux of generous feeling, and one of these is the assembling of the Congress in rehabilitated Rome. Gratitude for services in the past must be a present emotion in the minds of all who compose that mighty gathering. The Italy of the Renaissance, the asylum for all that was best in the literature and the science that had fled from the fallen Byzantium, laid all Europe under the heaviest obligations, and in no literature and in no science more than in those of the healing art. It is a thrice-told tale—of which the octocentenary and tercentenary celebrations of Bologna and Padua are recent versions—the rescue by Italy of the Vestal fire of culture and her fostering tendance of the same in the night of the Middle Ages and in the gray dawn of the Revival. To draw life and warmth from that flame the northern races crossed the Alps and so profited by its genial influence as to return to their respective countries equipped for its further spread and its higher diffusion, till the derivative light gradually eclipsed the central one and left it in comparative obscurity. Farther and farther did Italy seem to shrink into the scientific and literary background, till even her art shared the general dwindling and decay, and only the plaintive voice of her lyric drama remained to thrill the modern world with its dirge-like *cantilena*.

Now all this is changed. In one of the most dramatic situations ever witnessed at a great meeting of men, Germany, which had so long eclipsed Italy scientifically and so long kept her down politically, Germany, in the capital of her own unity, Berlin, posed at the last Congress as the vindicator of Italian claims on the profession, and through the mouth of VIRCHOW, responding to the appeal of BACCELLI, proposed that the triennial parliament of the healing art should hold its next sitting in Rome. It was the *amende*, generously conceived and as nobly accepted, of the masterful power to that which it had superseded; it was an expression of the joy with which the conqueror welcomed back the subject to her side and placed her on equal terms, and anticipated the day when the rehabilitated Italy might again assert her genius and repeat the triumphs, if not resume the supremacy, of former days. It was a beautiful illustration of the catholicity of science, and of its power of extinguishing international jealousies, and fusing down opposed traditions into a common and mutually sympathetic spirit. It was the cementing of a nobler alliance than that Triple one by which the Teutonic and the Latin civilisations, through their most conspicuous and representative types, combined their forces and fell into line and proceeded on the march, whose goal is the ultimate regeneration of humanity.

And if Northern Europe absolved its sense of obligation through the proposal of VIRCHOW, Italy, on her side, met the acknowledgment more than half way. In noble words BACCELLI showed what Southern Europe has learned from the vigorous touch of its Teutonic contemporaries—what it has yet to learn from a continuance of the same life-giving contact. This happy influence—this salutary contagion—is nowhere more effective than on the occasion of international congresses. Again and again have Italian physicians and surgeons admitted what a revelation it was to them, just emerging from mediæval tradition, to witness in London, for example, the almost fanatical devotion to cleanliness conspicuous in the hospitals; to take note of the sound views and equally sound practice as to ventilation, disposal of beds, and orderly arrangements in the wards; to profit by the example of respect for the patient going hand in hand with self-respect on the part of clinician, student, and nurse alike, all coöperating

to a result of punctuality, tidiness, comfort, cheerfulness, brightness and hope, that made the institution in the highest of all senses a "hospital"—a hospital in which the primary conception of entertainer and guest-friend found expression in the tenderest solicitude and in the most effective assistance on the part of the hosts, and the most gracious, most humanising gratitude on the part of their temporary charge. Such impressions, carried away from the London school to the comparatively backward "Spedali" and "Ricoveri" south of the Alps, have already fructified for good in Italy, one conspicuous example of their salutary outcome being the noble Institution in which the Congress is sitting to-day. The "Policlinico," when it receives its finishing touches, will remain as a monument not only of the elevated humanity and lofty scientific ideals of its "author and finisher," GUIDO BACCELLI, but also of the vigilance with which the good points of such edifices elsewhere have been utilised, and of the thoroughness with which the lessons afforded by meetings of Congress in other capitals have been taken to heart and transplanted into congenial soil.

The purely medical programme of the present gathering is rich beyond all precedent—so rich, indeed, as almost inevitably to produce that "embarrassment" which excess never fails to bring with it. And yet there is not a section in which a residuum of profit in theory or in practice will not survive. To what extent the members of Congress will draw advantage from thus being thrown together *en masse* will depend mainly on themselves, conditioned not a little by happy accident, such as the fortuitous coincidence of fresh facts or apposite experience cropping up on questions in which they are specially interested. Even where such felicitous conjunctures should fail, and the proceedings partake more of "crambe repetita" than of newly purveyed and scientifically dressed food, there is always the stimulus to professional accomplishment imparted by the presentation of the healing art as a whole, by the survey of medicine in its *ensemble*, so apt to be lost sight of amid the subdivisions and ramifications of its various parts—for indeed "specialism" can be carried too far. There is the further element of a not ignoble emulation started by the friction and even collision of celebrated nature-students of divers nationalities and schools, and the desire, if not individually, to shine, at least to keep aloft and well to the front the banner under which this seat of learning or that professorial cult has marched to victory in previous encounters. And when all these and similar conditions of a successful Congress are exhausted, there is in the meeting-place of this one a prestige, a unique interest, past, present and future, such as no other rendezvous could command. Add to all this the glory of an Italian *primavera*, the flush and the pride of nature in earth and sky, in Campagna, on wooded upland, and on lonely sea-board, nowhere contemplated to such perfection, amid surroundings and association so august, as in the rehabilitated City of the Cæsars. Dull of soul, indeed, and poorly responsive to generous impulse must that man be who, representing the humanest of professions, does not feel "touched to finer issues" on witnessing the march-past of the army of medicine on soil so traditionally the arena of war and devastation. Never is he likely to assist again at a spectacle more inspiring. Never again may he read into a pagan poet's words a meaning more significant than their author dreamt of:—

> "Alme Sol! curru nitido diem qui
> Promis et celas, aliusque et idem
> Nasceris; possis nihil Urbe Roma
> Visere majus."
>
> "Sun! that unchanged, yet ever new,
> Lead'st out the day and bring'st it home,
> May nought be present to thy view
> More great than Rome."

AN interesting paper on Symphysiotomy, by Dr. HARRIS of Philadelphia, was read at the last meeting of the Obstetrical Society of London, and published in our issue of March 17th. The writer briefly referred to the early history of the operation, the causes that led to its abandonment about the middle of the present century, the revival of the operation by MORISANI, and its progress up to the present time. In what may be termed the first period of its history—that is to say, from 1777 to 1858—there were 150 cases of the operation. The result was known in 114 cases; 74 women recovered and 41 children—that is to say, the mortality during the first period was for the mother 34 75 per cent. and for the children 63 625 per cent. An accurate table containing full particulars of these operations, so far as they could be ascertained, appears in a previous paper by Dr. HARRIS on the Revival of Symphysiotomy, published in the *American Journal of Medical Sciences*. An examination of this table is instructive and shows, among other things, as was mentioned in the debate that followed the reading of the paper, that the mortality during the first period was not a diminishing one, since in the last ten cases belonging to it the operation resulted in a mortality to both mothers and children of exactly 50 per cent. An analysis of this table of cases also affords some information as to the causes of so unsatisfactory a record, for it is evident that in many of the cases there was an extreme degree of pelvic contraction, and the operation appears to have been performed in those cases with the view of exalting symphysiotomy into the position of an alternative to the Cæsarean section. Much of the ill-success attending this earlier series of operations must, no doubt, also be ascribed to the want of observance of antiseptic methods. When we come to the second period—that is, to the revival of the operation by MORISANI in 1866—we find that there were 50 cases of operation recorded between 1866 and 1880, and that in this series the mortality of the mothers had fallen to 20 per cent. and that of the children to 18 per cent., while a still later series gave a mortality of only 4 per cent. for the mothers, with one of 12 per cent. for the children; so that the mortality in the same period has been one that has steadily diminished. In this progression to security the operation follows the course that may be expected in the evolution of operations based on sound principles; for no improvement in the results of an operation unsound in itself is likely to be produced by experience, however considerable. Speaking now only of the second period in the history of symphysiotomy, we find that the operation was confined to Italy till February, 1892. In 1891 there were all over the world only 12 symphysiotomies, and these were all performed in Naples. In 1892 the total number of cases from all countries was 83,

only 8 of which occurred in Italy. In these 83 operations there were only 9 deaths, although in many of the cases the operator was operating for the first time. PINARD had no death till his twentieth case. Dr. HARRIS'S figures record only 1 death in the last 15 symphysiotomies performed in the United States down to Nov. 20th, 1893. It is certainly a remarkable thing that symphysiotomy should have attained to the established position it holds on the Continent and in America, and should, nevertheless, have made so little progress in England. We believe we are right in saying that symphysiotomy has only been performed twice in England since the revival of the operation; the first case being one by Dr. LEWERS, published in THE LANCET of Aug. 5th last year, and the second case one by Dr. GALABIN, not yet published, but referred to by Dr. HORROCKS in the course of the discussion upon Dr. HARRIS'S paper. The former case was successful as regards both mother and child, who were shown before the Obstetrical Society last year. We gather from Dr. HORROCKS'S remarks that in the latter case, the patient, though she recovered from the operation, is nevertheless practically bedridden. As regards this case there seemed to be an impression that the pelvis was greatly contracted, and if that be so the case was not in the class for which symphysiotomy is now recommended. Indeed, as we have already said, one of the most fertile causes of disaster during the first period of symphysiotomy was that the operation was often performed in cases of extreme pelvic contraction. The limits of the operation are now much better understood. If the operation is performed in cases where the pelvis is just too small to allow a full-term child to be delivered even by forceps, the movements at the sacro-iliac articulations are not sufficiently extensive to be followed either by immediate bad results or, as far as our present experience goes, by remote ill-effects such as difficulty in locomotion. Obviously if the operation is performed in cases of extreme contraction the range of movements at the sacro-iliac articulations during delivery must be proportionately more extensive, and the immediate danger, as well as the risk of after-difficulty in walking, must be greatly increased.

The discussion that followed the reading of Dr. HARRIS'S paper showed that the majority of those present regarded symphysiotomy with little favour; at the same time, it must be borne in mind that those who spoke against the operation were doing so apart from any personal experience of it; and everyone knows how abruptly theoretical objections, apparently of the most convincing and cogent nature, are apt to disappear in the light of practical experience. We may briefly refer to some of the objections in question. First, it was maintained that modern Cæsarean section had a mortality of only 10 per cent., that this was about the mortality of symphysiotomy, and that as symphysiotomy might be followed by after effects preventing the patient from walking or working, it was better to perform Cæsarean section. We very much doubt whether any operator in London, or even the joint results of any two operators in London over a series of Cæsarean sections, can show a mortality approaching so low a figure as 10 per cent.; on the other hand, we should also say that the mortality of modern symphysiotomy is much nearer 5 than 10 per cent. Again, if the two operations are compared as operations, the advantage appears to us to be greatly in favour of symphysiotomy. A Cæsarean section takes a longer time and is surrounded with more potential dangers, such as shock, hæmorrhage, and peritonitis. Skill and experience can, of course, reduce these risks to a minimum, but they belong to the operation and are constantly there, ready to come into play, sometimes owing to the circumstances of the case itself—for example, if the uterus fails to contract well—sometimes when there has been the slightest error of judgment on the part of the operator. On the other hand, a simple symphysiotomy takes a very short time. Many cases are reported as having been performed in three minutes, and the shock must therefore be inappreciable; the peritoneum is not opened, and, although fatal hæmorrhage has been known to occur, still it has been an altogether exceptional thing for even troublesome hæmorrhage to be met with. As regards the other alternatives, those specially referred to were the induction of labour, delivery by forceps, and turning. The induction of labour is no doubt generally very satisfactory in its immediate results, but every obstetrician knows that a large proportion of the children die within the first year of existence and cannot be reared. Then, as to delivery with the forceps, there appears to us to be no antagonism between symphysiotomy and the use of forceps; rather the contrary, for they occupy different parts of the obstetric field. When reasonable efforts to deliver by forceps have failed in a case where the pelvis is only slightly contracted we have the most valuable indication for symphysiotomy. We say "reasonable efforts," because it has been well said that some forceps operations are no better than craniotomies in disguise; and in forceps cases it should be remembered that "force" (beyond what can be used without fatal injury to the child) "is no remedy." We need say little of turning as an alternative of symphysiotomy. Both operations are undertaken more especially in the interests of the child. All those with experience of version in cases of contracted pelvis know that this mode of delivery is attended with considerable risk to the child from injurious pressure, prolapse of the cord, and other causes; and, besides, turning in such cases is not unattended with a certain amount of risk to the mother.

There is another point that should not be lost sight of in considering symphysiotomy; it is this, that the operation is more especially one of emergency, and that it can only exceptionally happen that we can say beforehand that the case will be one requiring symphysiotomy. The indication for symphysiotomy is not so much a question of any given degree of pelvic contraction, or of any particular measurements that may be taken, provided that the contraction is only slight, but it is to be found rather at an advanced stage of labour, when the natural powers have been unable to effect any progress, and when the forceps, skilfully and judiciously applied, fails to effect delivery. We know that the majority are not always right; still the facts that symphysiotomy has now been performed a large number of times in Italy, France, Germany, and America, and that it has become a recognised operation in those countries, should, we think, be attentively considered by those at home

who have hitherto been sceptical as to the value of the operation.

THE report of the committee appointed by the Secretary of State for the Home Department some five months ago to inquire into the most effectual means of identifying habitual criminals has been published; and the result is a unanimous recommendation of the system of M. ALPHONSE BERTILLON, supplemented by an inclusion of the practical results of Mr. FRANCIS GALTON'S investigation into anthropometry, especially in its application to the patterns formed by the papillary ridges on the finger-tips. No one doubts that our present plan of recording the appearance of habitual criminals requires emendation. We are not as a nation fussy or hasty—at any rate about important matters—and the appointment by Mr. ASQUITH of a commission to inquire into the methods of identification of old offenders may be taken as fairly conclusive evidence that the administration of the criminal law was felt in the highest and best-informed quarters to be faulty in this direction. Our sheet-anchor at the present time is personal recognition by the police or prison officials. This is the means by which identity is proved in criminal courts, and though its scope is extended by photography, and is in some cases aided by the register of distinctive marks, recognition by the police is the main principle upon which the law depends for the establishment of the offender's identity. The weakness of the method is very obvious, and it is astonishing that mistakes have not more often occurred. A policeman is as fallible as a warder, and each is as fallible as any other citizen, while a photograph loses its value with lapse of time and with changes of hirsute adornment, besides giving no clue to the size and colouring of its object. Nor are these the only objections that can be urged against our present method. Photographs cannot be classified save upon some alphabetical or chronological plan, which the assumption of a false name would at once effectually baffle. Albums and alphabetical registers of scars, birth-marks, and tattooed devices, are all open to the same obvious objection. If the criminal gives a wrong name an immense search through unclassified documents is at once entailed, at a time when, perhaps, the machinery of the law can ill afford to wait. The present system of identification of habitual criminals is slow and faulty, the labour involved is out of all proportion to the results, and the risk of grave error is not inconsiderable.

That these are the views which occurred most vividly to the committee is shown by the conditions which they laid down for themselves in deciding what system should be recommended for adoption. They say: (1) the description, measurements, or marks which are the basis of the system must be such as can be taken readily and with sufficient accuracy by prison warders or police officers of ordinary intelligence; (2) the classification of the description must be such that on the arrest of an old offender who gives a false name his record may be found readily and with certainty; and (3) when the case has been found among the classified descriptions it is desirable that convincing evidence of identity should be afforded. The first and third of these requirements are met by Mr. GALTON'S method of recording finger-prints, and the second is amply provided for by M. BERTILLON'S elaborate and highly tested scheme for the classification of certain unvarying bony measurements. Mr. GALTON claims, and the committee have allowed his claim upon the production of his evidence of its soundness, that the patterns of the papillary ridges upon the bulbous palmar surfaces of the terminal phalanges of the fingers and thumbs are absolutely unchangeable throughout life, and show in different individuals an infinite variety of forms and peculiarities. And these are the two most important essentials that any method of identification could have. The chance of two finger-prints being identical is less than one in sixty-four thousand millions—that is to say, that if the number of the human race is reckoned (as it has been) at sixteen hundred millions, there is a smaller chance than one to four that the print of *one* finger of any one person should be exactly like that of *any* finger of any other person. If, therefore, two finger-prints are compared and are found to coincide exactly, it is practically certain that they are prints of the same finger of the same person; if they differ, the inference is equally certain that they are made by different fingers. That is equivalent to saying that the prints of one finger, if clearly taken, are enough to decide the question of identity or non-identity, and if the prints of three or more fingers be taken and compared by competent persons all possibility of error is absolutely eliminated. The papillary patterns serve, therefore, in a remarkable way to supplement M. BERTILLON'S method, by which also identification is nearly assured, and under which classification is carried to a very high point. As is well known, "Bertillonage" depends for its efficacy upon two facts—practically the same two facts applied to certain bones that Mr. GALTON had discovered in relation to the papillary ridges of the fingers—viz., that no two skeletons are ever identical in their measurements, and that certain bony measurements are persistently the same throughout adult life. Starting with these assumptions, which, with few reservations, have been generally accepted by the commissioners, who had before them the evidence of such anthropologists and anatomists as Dr. GARSON and Professor ARTHUR THOMSON, M. BERTILLON divides the whole world into two hundred and forty-three divisions, representing all the possible combinations of five sets of bony measurements, each of which is subdivided into three classes, according as the measurement falls within the arbitrary limits laid down as defining the average, above the average, and below the average. M. BERTILLON'S method will not be employed in its entirety in England because it does not fit with all our processes of criminal procedure, but his system of classification, under which in France for eleven years not a single identification has proved to be wrong, will be adopted. We desire especially to point out that the arbitrary figures by which M. BERTILLON has limited his average term in his measurements—and on which, therefore, his whole system of classification depends—could only have been arrived at by immense work and experience; and it is right that now, when, perhaps tardily, we propose to avail ourselves of his labours, we should recognise their magnitude.

But one question remains for consideration, and that is, what is the degree of expert skill required to take or

appreciate an accurate record of the anthropometrical points of a suspect under the joint method of Mr. GALTON and M. BERTILLON. The taking of finger-prints is an easy mechanical process which, with short instruction, could be performed by any prison warder. But the deciphering of them—that is, the use of them in identification—is not so easy a matter. If the tiny arches, loops, and whorls which make up the patterns on our finger-tips are capable of infinite variety, it must also be allowed that to the untrained eye they are very much like each other. Wherefore these records, though they can be taken by the ordinary official, can only be deciphered in detail by an expert. With regard to Bertillonage the opposite prevails. Although at first sight it would seem to be an easy task to take accurate measurements of certain skull diameters and bone lengths, if proper instruments be provided for the purpose, as a matter of fact, as was proved by the evidence of Professor THOMSON before the Commissioners, the possible sources of error are numerous; and as a result of anatomical criticism we may expect that the margin for error will be extended when M. BERTILLON'S system is in force in our prisons. From these two considerations it would seem to follow that, at all events during its inauguration, the system will have to be under the supervision of highly trained experts at both ends. While the working of Mr. GALTON'S method will require a person of special skill and training at headquarters to classify and decipher the mechanical impressions, the working of M. BERTILLON'S method will demand on the part of the operator in the prison both practice and skill in the details of expert anthropometry.

Annotations.

"Ne quid nimis."

A GERMAN SALUTATION TO ITALY.

WHILE mutual distrust seems to animate the political powers, mutual fraternity and good offices are cementing the scientific ones. There is, indeed, no more gratifying or reassuring spectacle in the contemporaneous world than the more than friendly *rapprochement* between two nationalities, lately so hostile to each other, as Italy and Germany. Political France may court the former at the expense of the latter, and strive to bring about a coolness, if not a recrudescence of old jealousies, between them; but scientific Germany is safe against such overtures, and Italy, however willing to have France as her friend and even ally, is not to be alienated from her Teutonic neighbour. On the eve of the great triennial Congress this is especially apparent. Germany, speaking through her representative evolutionist, Ernst Häckel, congratulates her old Latin foster-mother on her rejuvescence, and augurs for her a future not inferior to her mighty past, if only for the intelligence with which she has made the new ideas her own and the ardour with which she vindicates and diffuses them. Writing from Jena the most "advanced" of biologists tells his Italian adherents that "no country better than Italy can appreciate the immense bearing of the 'riforma monistica'—the scientific conception of the oneness of Nature—and the marvellous progress of latterday thought; for Italy is the classic motherland of fine art and of science, the parent of Giordano Bruno and Galileo, of Malphighi and of how many other philosophers and nature-students of the first order." After an expression of profound gratitude to his Italian disciples for the part they took in celebrating his sixtieth birthday, Professor Häckel proceeds: "The happiest years of my life were precisely those of my sojourn and scientific work in Italy, of my excursions to the Riviera di Levante and Riviera di Ponente, to Naples, and to Messina, not excluding the memorable months during which I was enabled to study 'la storia umana' (the history of man) in Eternal Rome, the capital of the worlds of art and letters. From that time, a space of forty years, I love 'la bella Italia' as my second country; and, as her splendid nature has become to me an inexhaustible spring of rich knowledge and of the noblest enjoyments, so also the genius of the Italian people has grown to be ever dearer and more 'simpatico' (congenial) to me. Moved by this intense love I have hailed with the liveliest enthusiasm that new and happy era which has given back to Italy and to Germany their liberties and their national unity. I am convinced that the natural alliance of the two sisters—united Italy and united Germany—has inaugurated for both a fresh period of progress and in this hope I join to my cordial thanks the best auguries for the welfare of Italy." It is quite in keeping with this eloquent "Glückauf," that in point of "distinguished representation" Germany outnumbers the sister nationalities at the Congress which she has taken the most active interest of all in, the "Esposizione di Medicina e d'Igiene." The English-speaking delegates, however, are sure of a not less hearty welcome than their Teutonic kinsmen, if we may judge from the greeting already vouchsafed to those who were the first to arrive.

THE ELECTION OF CORONERS, PAST AND PRESENT.

THE candidates for vacant coronerships at the present day may congratulate themselves that they are not put to the turmoil and expense of such an election and such a canvass as their predecessors had to undergo. When the late Mr. Thomas Wakley, the first medical coroner, was elected after a second contest, the first having been unsuccessful, the expense he had incurred was something enormous, while wooing the "freeholders" was a most difficult task. Besides all those who had a legitimate claim to the title there were not a few who claimed to be freeholders by reason of their being possessed of a grave, or, as the late Lord Chief Justice Cockburn suggested, "tenants at mortmain." Then the watermen of the Thames claimed to be freeholders, probably, as his lordship suggested, on account of the land covered by water. Mr. Wakley's successors—the late Drs. Lankester and Hardwicke, and Dr. Danford Thomas, the present coroner—were all put to a very large expense as well as to the hard work as it then was of a contest; but it is satisfactory to observe that the first medical coroner has been followed by a second, a third, and even a fourth medical successor—indeed, in Middlesex medical coroners are almost the rule. And as it is much easier apparently for medical graduates to become members of the bar than for the latter to become graduates in medicine, or indeed to obtain any medical or surgical qualification, the London and Middlesex County Councils will have no lack of candidates possessing what promises to be a new double qualification, not the old M.R.C.S. Eng., and L.S.A., but doctor of medicine and member of the English bar. The present time is a favourable one for medical candidates, the electoral body is an improvement upon the freeholders, and the expenses are trifling.

The number of aspirants for the coronership for North-East London and Middlesex increases rapidly. For present purposes it may be convenient to give an alphabetical list of the gentlemen whose names have been announced as candidates for the vacant post:—

Gross, Charles, M.D., M.S. Lond., F.R.C.S. Eng., D.P.H. Camb., Barrister-at-law.

Lithgow, R. A. Douglas, M.D. St. And., LL.D. Edin., M.R.C.P.Edin.
O'Connor, Bernard, M.D., M.Ch. Q.U.I., M.R.C.P. Lond., D.P.H., Barrister-at-law.
Strahan, S. A. K., M.D., M.Ch. Q.U.I., L.R.C.P. Edin., L.S.A., Barrister-at-law.
Westcott, W. Wynn, M.B. Lond., M.R.C.S. Eng., L.S.A., D.P.H.
Yarrow, Geo. Eugene, M.D. Heidelb., L.R.C.P. Lond., M.R.C.S. Eng., L.S.A., D.P.H., Barrister-at-law.

THE DIFFUSION OF SMALL-POX.

THE number of freshly recorded cases of small-pox in London last week was only 7, showing considerable diminution over preceding weeks for some time past. Three deaths were registered from the disease, and the end of the week found 87 patients under treatment—namely, 65 in the Metropolitan Asylums Board institutions and 22 in the Highgate Small-pox Hospital. In West Ham the cases fell to 15, with 2 deaths, and were 7 in Leyton. Only 5 new attacks were heard of in Bristol, 2 in Walsall, 6 in Handsworth, Staffordshire, 9 in Aston Manor, and 45 in Birmingham, where 8 deaths were registered. With the exception of 10 cases in Oldham and one death, the attacks in the other large towns were insignificant in number.

AN OVERCROWDED CHURCHYARD.

A DAILY contemporary gives details respecting the parish churchyard of Plumstead which are of special interest with reference to the forthcoming meeting of the Church of England Burial Reform Association in London next month. This association has of late concentrated its efforts upon the reform still needed—i.e., burial in perishable coffins and in a sufficiency of suitable soil. The following extract is from the report of the medical officer to the Plumstead District Board of Works with reference to the parish churchyard: "I visited it in company with the chief sanitary inspector. We saw three graves newly dug. We examined the floor of each, and found that in each case there was a coffin immediately below, so that there would not be one inch of earth separating the two coffins. The regulations prescribe that one foot of earth be left undisturbed. (But, as was stated in THE LANCET not long ago, this foot of earth does not always contain twelve inches.) There were sixty-nine bodies buried in the churchyard in January and February. This is at the rate of 414 a year. This would be a large number for a new graveyard, but in a yard already overfull it becomes a much more serious matter." The board decided to send copies of the report to the Home Secretary, the Bishop of Rochester, and to Colonel Hughes, M.P. There is every probability, therefore, that Dr. Hoffman will be sent to inspect and report upon this burial-ground, and we may safely leave the matter in his able and experienced hands. Passing from the special case of this churchyard to the more general aspect of the subject it shows that the disposal of the dead is still one of the pressing subjects of the day. Notwithstanding the favour which cremation has found with a section of the public, and the fact that more than one local authority has decided to use it for the disposal of the bodies of any future victims to cholera, the fact remains that out of the 550,000 bodies which have annually to be disposed of within the limits of England and Wales, not one per thousand is subjected to cremation. Practically, therefore, ground must be acquired for the burial of this large number of bodies, and notwithstanding all that has been said and written there is still a deplorable amount of indifference on the part of the public, which it is to be feared will only be corrected by history repeating itself in the shape of some very ghastly revelations. Assuming the facts disclosed at Plumstead to be correct additional cemetery space has been wanted for some time back and ought to be acquired immediately. This can only be done at a very great expense and it becomes more than ever necessary that the burial of the future shall be very different from that as now carried on in Plumstead churchyard. The foot of earth between each coffin is not a maximum but a minimum requisite, in fact it is not enough except for the bodies of children. It is to be hoped that the forthcoming meeting of the Burial Reform Association will be well attended, and that those who are engaged in this good work will have their hands strengthened. Apathy and indifference aggravated, if they did not cause, the cholera epidemic of 1849. Let us take warning before our existing churchyards and cemeteries become like those described by the late George Alfred Walker in his "Gatherings from Graveyards."

THE MINERAL WATER TRADE AND RECOVERED BOTTLES.

NOTHING could be more commendable than the motive principle which we are told inspires the members of the Mineral Water Bottle Exchange and Trade Protection Society. This, according to the chairman, who presided at a recent dinner of the society, consists in an agreement to carry on business in a right and honourable way. It is gratifying to find the duty of mutual justice and regard, so often overshadowed by more personal interests, thus candidly admitted, and it is equally satisfactory to learn that an association which professes this honest creed is in a prosperous condition. We would note, moreover, that its success is not to be ascribed merely to its enterprise, but also in great measure to its economical management. Some interesting facts may be quoted in proof of this assertion. We are told, for example, that a saving of £22,000 has been effected by the recovery from all sources of some 3573 used syphons and 5,000,000 bottles. As an evidence of thrift the statement is highly encouraging. Unfortunately it cannot be received without an important qualification, for we are also informed that of the bottles more than half were recovered from the dust-heap. Thrift, indeed, this and admirable penny wisdom; but it implies no slight peril and a costly sacrifice of health, unless it be accompanied by most careful arrangements for the cleansing and disinfection of the recovered bottles or for their destruction where these are not observed. It is, therefore, obviously essential that the society should provide effectual guarantees that this elementary duty is not overlooked by its members.

TOWN REFUSE AS FUEL.

WE have before adverted to the satisfactory progress which is being made, not merely in the disposal, but also in the utilisation of the dust and garbage of towns by employing it as fuel to raise steam for electric lighting and other purposes. Of the systems now in use which lay claim to greater economy than those hitherto proposed is that in which the important advantages of a Livèt generator are secured. Experiments on a practical scale with this generator have been conducted for some time at Halifax, and a detailed account of the operations which we viewed there appeared in THE LANCET of Feb. 17th last. Although we could not speak decisively of the merits of this process, as our inspection was very cursory, yet we were somewhat impressed with what we saw and ventured the opinion that the process appeared on its face to give promise of satisfactory results. We have since learned, on the authority of *The Times* of the 23rd inst., that the efficiency of the system has been tested recently by Mr. Nursey, C.E. The test, it is stated, was of five hours' duration, during which the refuse used was carefully weighed and the feed water measured by meter. As there was no engine to use the steam produced

it was blown off at a pressure of 50 lb. per square inch. During the trial the velocity of the air entering the furnaces and ashpits was estimated. The temperature of the gases in the chimney flues was also ascertained; it was 360° F. The temperature of the feed water taken at the time of feeding at the point at which it entered the boiler was 240°. The five hours' trial resulted, according to these tests, in the evaporation of 17,800 lb. of water with a consumption of 4628 lb. of the refuse, which is equal to 3·84 lb. of water evaporated per pound of fuel. The quantity of fuel burned per hour was 926 lb. It would seem, therefore, that a satisfactory solution of the problem of ridding and appropriating for good the dust and nuisance of our towns is near at hand. If so, we have another illustration of the useful results afforded by paying attention to both the requirements of chemistry and engineering; indeed, the study and application of both sciences is a *sine quâ non* if any substantial progress in sanitation is hoped for.

MEAN ATMOSPHERIC TEMPERATURE IN RELATION TO HEALTH.

OBSERVATIONS on the weather are like those on most other subjects in that the interest of novelty attaching to them increases not a little when they seem to contradict our previously formed opinions. In the atmosphere there is nothing more certain than the possibility of change, and its governing rule is ever a law of variation. A rule there is, however, which is obeyed not only by telluric forces but equally by the energies of life. As regards this aspect of the subject we are instructed by constantly recurring proofs, and these in their appearance are amenable to a certain order. Noteworthy on account of the interest above mentioned is the somewhat novel explanation given by Mr. W. H. Dines at a recent meeting of the Royal Meteorological Society of the relation existing between the mean temperature of winter and summer and the health of human beings. A review of statistics examined by Mr. Dines has led him to the conclusion that a cold winter and a hot summer are each of them unhealthy seasons; a mild winter and a cold summer healthy respectively. This is hardly the conclusion that most of us would have expected as the result of a careful analysis, and we cannot expect that it should constitute a rule unbroken by repeated exceptions. The practical significance of the terms "hot" and "cold" in this connexion requires explanation. Extreme cold, for example, implies at various ages a very different physical effect. Its influence upon the very young and the aged is very similar to that which we may witness in any year in the vegetable world, an arrest of growth and even in some cases of all vital evidences. Frost, again, implies fog, and this in its turn the condensation of a certain proportion of unwholesome emanations. A water drought similar in effect to that of summer is another consequence, and one which occasionally proves to be of serious import from its interference with sanitary necessities. Apart from frost, however, there is a danger in the prevalence of cold, and still more in its intermittent occurrence. Attended by wet or by high wind it cannot but try the powers even of constitutions not specially weakened, much more of those in which age or illness has lowered physical vigour below the usual standard. In certain evident respects, therefore, there is danger to health in the long prevalence of winter cold. We must not forget, however, that mild seasons on the other hand have their peculiar perils. No condition as a rule more favours the development of morbid germs than a moist and rather warm atmosphere, and it is in such weather as engenders this condition, and at seasons of the year in which it is likewise usual—spring and autumn, for example—that we most commonly meet with one or all of the class of zymotic disorders; while the evils associated with mere exposure to chill are less marked. A hot summer in like manner leaves its particular impress on the public health. It claims its proper tribute from exposure, and without doubt we may have most serious illness as the effect of such exposure when the tissues of the subject are overloaded with the waste of surplus food and tissue changes. Its water famines, as the experience of last summer proves, are productive of much insanitary uncleanness and of morbid germ growth. On the other hand, we possess in dry solar heat a strong natural antidote to some vital poisons—that of cholera, for example—though it should be remembered that for many years this disease has happily had very little effect upon our national death-rate. There is a good deal, therefore, to be said on both sides of the question suggested by Mr. Dines's paper, but a much fuller examination of its terms and relations is needed before we can decide as to the truth of his propositions or the actual causes of mortality as related to atmospheric temperature.

EFFECTIVE FLUSHING OF DRAINS.

THE report of the engineer of the Bradford Sanitary Association, Mr. Malcolm Paterson, M.Inst. C.E., which is included in the general annual report of that society, contains some practical criticism of the report of the special committee appointed by the Sanitary Institute of Great Britain to inquire into the subject of effective flushing of drains. The Sanitary Institute conducted, it may be remembered, over 800 experiments under conditions which we have already enumerated in full.[1] Certain of these experiments were made with 4 in. and 6 in. drains 50 ft. long, and laid at gradients of 1 in 30, 1 in 40, and 1 in 75 for 4 in. pipes, and of 1 in 30 and 1 in 40 for 6 in. pipes. A hopper basin was fitted to the head of the drain, with an S trap having a 2 in. seal, leading with a bend into the drain, the top of the closet being 2 ft. 3 in. above the drain. A syphon waste-preventer discharging 2 gallons in 5 seconds and 3 gallons in 7 seconds was placed 4 ft. 3 in. above the basin, being connected therewith by a 1¼ in. flush-pipe. A disconnecting trap was affixed to the lower end of the drain. A second set of experiments was made with similar closets and waste-preventers and drains of the same sizes—i.e., 4 in. and 6 in.—laid at gradients of 1 in 40 and 1 in 60 respectively, but with only 26 ft. of pipe. It is the first set of experiments that their engineer takes into consideration for the benefit of the members of the Bradford Sanitary Association, but his words apply, *a fortiori*, to the whole report. The results obtained by the Sanitary Institute's committee showed that with a 2-gallon flush no less than 21 per cent. of the solid matter placed in the closet basin lodged in the drain. With 3 gallons only 3 per cent. remained in the 50 ft. drain. On this evidence the committee recommended that a minimum flush of 3 gallons should be fixed, with a maximum of 3½ gallons to prevent waste. This recommendation Mr. Paterson criticises from the point of view of what may be called human fallibility. In the laboratory experiments we have, he says, "50 ft. as the limit of length; an invariable flush of 3 gallons; no bends horizontally, as far as can be made out; and drains presumably water-tight." But in real life we have: "no limit to the length up to 150 ft.; variable flushes .....; bends and junctions of all sorts .....; and drains good, bad, and indifferent, but mostly leaking more or less." And the gist of the comparison between the real and the ideal is that economy of flushing water will be found bad economy, and that the wisdom of the former policy of the borough of Bradford in permitting a maximum of at least 5 gallons remains wisdom, in spite of the results obtained by the Sanitary Institute's committee. We agree with Mr. Paterson that in real life the exact conditions which prevail in an academical experiment do not obtain,

[1] THE LANCET, Feb. 3rd, 1894.

but this does not prevent such experiment being of the highest value, both as a standard of comparison and an illustration of the ideal. For there is an ideal even in waterclosets. We congratulate the Bradford Sanitary Association on the amount of practical work which their report shows them to have done during the year.

THE HEALTH OF MR. GLADSTONE.

WE are very glad to be in a position to announce authoritatively that Mr. Gladstone has now recovered his general health, although some irritation of the bronchial mucous membrane remains. His immediate return to London is anticipated, when his eyes will be re-examined with a view to settling the approximate date when operation will be feasible.

"LOVE" AND CRIME.

To undertake the briefest analysis of all the causes which have resulted from time to time in crimes of violence would be a work far too exhaustive for the space at our disposal. We cannot, however, pass over in silence one particular phase of this question which was recently brought into somewhat striking prominence among the news of the day—namely, the connexion between what is sometimes called "love" and crime. Last week in particular no fewer than four cases of murder or suicide were reported, in three of which love was alleged to be the motive. In one instance a married man shot his paramour, then himself; in another, the murderer was a young man, overworked in his calling, one of a family in which the taint of insanity was well marked; in a third, a youth aged nineteen shot at his mistress, aged seventeen, the mother of a child, and afterwards took his own life. So much for excess in love. Naturally the question is asked whether this passion—at all events when witnessed by such volcanic manifestations—is not rather a form of disease than a sane emotion. And the answer we would render is in the affirmative. It is true that all sense of responsibility is not lost in the wretched perpetrators of these offences. For this reason we cannot, unless in special cases, deny the justice of conviction when it reaches them, and for this reason also we are encouraged to apply in the treatment of any who may be prone to the like errors the remedies best adapted to their moral and physical development. The removal of all known mischievous influences is a primary part of such treatment, and among these the most casual observer cannot fail to note some with whose presence we have too long been familiar. The lack of a definite purpose in life—a sense of life-duty we might call it—is chiefly to be noticed, and with it the state out of which this arises—namely, the absence of anything like a methodical home-training in regard to the absolute necessity and the practice of virtue. It is in the circle of relatives and friends far more than elsewhere that this part of our education must be acquired, especially if we would incorporate it as a habit of the mind. In well-arranged occupation and in physical exercise we have other and potent aids to healthy thinking, and nothing more truly tends than do these wholesome forces to dissipate the cheap horror of glaring waybills and penny dreadfuls, and to hold the mind in a state of sensible equilibrium. We have spoken of love, but it seems like a blasphemy of truth to name thus the weak passion which at times discharges its resentment with such anarchic destructiveness. The silly maid or idle apprentice who wastes an afternoon in aimless philandering, and forms perhaps a fresh attachment in every month or quarter of the year, has no right to misuse the word in describing a feeling so superficial and so spurious. There is far too much of this promiscuous "love." Good does not come of it, and the sooner this fact becomes a canon of decent life, admitted by young and old, the better. What is wanted for the cure of mental weakness bred of this germ of morbid feeling is instruction, systematic and patient as well as uncompromising, in the primary virtue of sincerity; with the healthy use of all powers in a daily occupation, a process essentially hostile to that vehement attachment which is really a form of self-love, and as truly conducive to that high and only true form of love the essence of which is self-denial.

FUNCTIONS OF THE CEREBELLUM.

IN the Proceedings of the Royal Society is an account of certain researches by Dr. Risien Russell, undertaken with the view of determining the relation of the cerebellum to the cerebrum, the influence it exerts upon it and upon the spinal cord, and the nature of the paresis which occurs when part of it is removed. The most important and novel result was obtained on investigating the excitability of the cerebral hemispheres after unilateral ablation of the cerebellum. While this organ was intact the excitability of the cerebral hemispheres to the induced current was equal on the two sides. When, however, one half of the cerebellum was removed it was found that the opposite cerebral hemisphere was more sensitive to the current than its fellow, and this difference in excitability persisted and was present three months after the half of the cerebellum had been removed. Another method of experiment carried out in animals similarly treated also furnished interesting and confirmatory results. This was the administration of absinthe, a substance which, as is well known, produces violent convulsion. In the animals under consideration the increased excitability of the opposite cortex was evidenced by the exaggeration of the convulsion on the side of the cerebellar lesion, and it appeared that the convulsion on the other side was diminished. There was also a difference in kind as well as in degree, for the tonic spasm characteristic of the second stage in a dog with the cerebellum intact was more or less replaced by clonic spasm on the side of the lesion. Such results are important as apparently demonstrating the upward action of the cerebellum on the cerebrum, probably of an inhibitory character. Whether the rigidity, paresis, and other symptoms which follow removal of one half of the cerebellum are the result of this influence alone, or whether there is also a downward action on the spinal cord, is not quite clear. The rest of the paper is devoted to a description of the symptoms characteristic of unilateral removal of the cerebellum, and of control experiments, in which the labyrinth on one side was extirpated. With this none of the phenomena characteristic of the cerebellar lesion were present.

ANNUAL REPORT ON THE PEABODY DONATION FUND.

THE trust fund of half a million sterling which was so munificently presented by the late Mr. Peabody between 1862 and 1873 for the improvement of the housing of the poor of London, was valued at £1,110,809 on Dec. 31st last. In other words, the fund has more than doubled itself during the thirty years of its existence. According to the twenty-ninth annual report, recently issued by the trustees, it appears that up to the end of last year the fund has provided 11,273 rooms (exclusive of bathrooms, laundries, and washhouses), constituting 5070 separate tenements—namely, 75 of 4 rooms, 1737 of 3 rooms, 2404 of 2 rooms, and 804 of single rooms. The number of persons in residence at the end of the year was 19,937, a slight decline from the number at the end of 1892, owing mainly to temporary removals during extensive structural alterations in progress at the Spitalfields buildings. The average weekly earnings of the head of each family in residence at the close of the year was 23*s.* 7*d.*; the average rent of each tenement

was 4s. 9d., and of each room 2s. 2d., the rent in each case including the free use of laundries, sculleries, and bath-rooms. According to the report the birth-rate among the resident population during the year 1893 was 35·1, and the death-rate 17·6 per 1000. The high birth-rate, as well as the low death-rate, were both probably due in great part to the abnormal age distribution of the population, which includes an exceptionally small proportion of elderly persons. The deficiency in the proportion of elderly persons in the Peabody population more than counterbalances in its effect upon the death-rate the excessive proportion of infants and young children under the age of five years. The report states that the mortality returns include 65 deaths of residents of the Peabody Buildings which occurred in hospitals. It should be remembered, however, that the workhouse infirmary is, in fact, the hospital most generally used by such a working class population as that inhabiting the Peabody Buildings, and that the trustees in their report make no reference to the inclusion of these deaths in their statistics. Probably the most satisfactory feature in the mortality statistics given in the report is the low rate of infant mortality. During the year 1893 the proportion of deaths under one year to births in these buildings was 126 per 1000, whereas the mean proportion for the whole of London was 164 per 1000. These figures afford apparently trustworthy evidence of the undoubted sanitary benefit resulting from the princely munificence of the late Mr. Peabody, and from the judicious administration of the fund by the trustees. It is impossible to overrate the future effect of the trust upon the housing and sanitary condition of the population of this vast metropolis through the steady but inevitable extension of its operations.

THE MORAL OF THE LEWISHAM LUNACY CASE.

THE Local Government Board, having had under consideration the report of their inspector, Dr. A. H. Downes, with regard to the truth of Mr. Williams's allegations against the Lewisham Board of Guardians to the effect that he had been sent to Cane Hill Asylum while he was a sane man, have communicated their opinion in the matter to the Board, and in so doing completely exonerate, we are glad to say, the medical officers of the Board and the authorities of Cane Hill Asylum. The Local Government Board found that "the medical officers proceeded in good faith and with due care and professional discretion in arriving at their conclusion that Williams was of unsound mind and had suicidal tendencies, and that, this being the case, it was their duty to take the necessary steps for his removal to the asylum as early as possible." They also found "that many of the allegations as to incidents in the lunatic ward and otherwise are without adequate foundation." But they were unable to credit the workhouse officials with perfect care and discretion. It is very good that such cases as this should be threshed out in public, as the treatment of the pauper and the lunatic are subjects upon which the public always—and rightly—keep a jealous eye. The influence of certain powerful novels, whose names will immediately rise to all lips, though their publication took place decades since, has no doubt contributed to the popular belief that the pauper and the lunatic do not always meet with fair play. "Oliver Twist" was written over fifty years ago and "Hard Cash" over thirty, and in neither case was a desire for particular precision allowed to interfere with the author's sense of the picturesque. Neither book was exactly accurate, but each had a good purpose, and each most undoubtedly served it; but by exactly as much as they served their purpose in days gone by must their authority as present-day presentments of asylum or workhouse be held poor; for the abuses have been remedied. Yet we feel certain that many believe that the condition of affairs described in these two romances still prevails; and it is as a check upon this sort of loose credulity that such action as that brought by Mr. Williams against the Lewisham Board of Guardians should act effectually. The public will learn and appreciate two things from the report of the Local Government Board upon the action. Firstly (the smaller thing) that the medical care in the institutions was found to have been wrongly abused; and, secondly (a far more important matter to the public, though not so pertinent to the interests of the medical profession), that a pauper lunatic with a grievance can obtain a hearing in places where redress for himself and condign punishment for his unjust oppressor would assuredly follow on a proven injury.

CORPORAL PUNISHMENT.

THIS is a subject which has more than once engaged our attention, but on which, perhaps, another word or two may well be said. Corporal punishment is one thing, the mental effect produced by it is another; and this feature of the question, in some of its bearings at all events, is apt to be overlooked by the castigator. If we were able to ensure that the administrators of punishment of this kind were always actuated by the simple idea of securing the ultimate benefit of the recipient of it there could be no fear that the chastisement would exceed the limits which prudence and benevolence suggest. This, however, is a platitude which needs no enforcing in these columns. What we are here wishful to reiterate is the wholesome precept, to be taken to heart by schoolmasters and others who have charge of children and young folk, that whilst corporal punishment is in some circumstances desirable, and in certain cases even indispensable, that part of the person should always be selected which, on account of its comparative distance from important and highly specialised structures, is less likely to be subjected to anything like serious injury. We have already in a former article on the same topic alluded to the common practice of "boxing the ears," a form of correction applied frequently to a petulant or refractory child, and we mentioned it with disapprobation. But, after all, the less corporal punishment is resorted to for the purpose of bringing into subjection juvenile delinquents the better will it be for the rulers of a school or household as well as for those who are subject to its sway. In a recent instance in which an assistant schoolmaster was summoned before Mr. Curtis Bennett, at the West London police-court, for assaulting two pupils under the care of the defendant, and on whom fines to the amount of 50s. and 30s. were inflicted in the two cases respectively, the presiding magistrate took occasion to offer a few remarks the drift of which was much in the direction of the advice given in this short annotation.

LOUIS KOSSUTH.

WITH Kossuth there has gone to the majority one of the elemental forces of the nineteenth century—a man but for whom the past sixty years would be shorn of much of their significance and interest, and the years to come would have a poorer yield of civilisation to show. The vitality of the Hungarian patriot was extraordinary and reinforces Sydenham's view of the causes which in great captains by sea or land, as in great professional men and statesmen, conduce to the undoubted longevity of these prime specimens of humanity. There would seem to be something stimulating and, in a peculiarly vital sense, sustaining in the humanitarian spirit, specially when lived up to with the steady and pure devotion that was conspicuous in Kossuth. Of his contemporary "swordsmen in the crusade of humanity" he was the oldest, but none of them can be said to have died young—except perhaps Cavour; but, though that consummate master of statecraft was but fifty-one at his death, his days were so manifestly shortened by his own grievously mistaken and inveterate recourse to venesection—a practice which, as has been shown in these columns, he was quite capable

of exercising on himself in the absence of professional sanction—that he can hardly be said to have died by natural causes. On the other hand, Garibaldi was well into the seventies when, after years of suffering from rheumatoid arthritis, he passed away in the mid-summer of 1882. Deák, a compatriot of Kossuth, to whom Austria-Hungary owes much that is stable in her working constitution, was also a septuagenarian, and Mazzini closed a life in which the thinking, and organising, and silent activity of three lives were concentrated just within sight of seventy. On the other hand, the agitator, as distinct from the patriot proper, leads a too irregular, a too unequal life for longevity. Its tenour is so often disturbed by obstacles of its own creating, its alternations of ecstatic anticipation and the dejection of disappointment are so violent, as well as so frequent, that stability of body and mind, and the staying power of both, are seriously compromised. If, as the great Swiss surgeon said, "our years are dependent on our arteries," the tension of strain and the flaccidity of reaction to which the unbalanced enthusiast subjects his tissues generally use up his strength and shorten his days, when, indeed, he does not anticipate death like a Cleon or a Masaniello. The calm decay of a noble organism like Kossuth's is the fitting close to the lifelong cult of humanity in its purest sense—a cult which braces mind and body alike by masculine self-denial and self-discipline, just saving itself from the counter evil of asceticism by the brotherly spirit which never discountenances healthy enjoyment because it cannot personally take part in it.

SOME DANGERS OF THE SCHOOLROOM.

UNDER the title of "Some Derangements of the Heart and Stomach produced by the Usual Position assumed by Children in School,"[1] Dr. Motais read an interesting and important paper before the Académie de Médicine of Paris. This subject received a considerable amount of attention at the International Hygienic Congress held in London in 1891. By the "usual position assumed in school" Dr. Motais means that attitude in which the pupil seats himself on the ischial tuberosity, supporting himself by leaning on the left elbow and stooping forwards, so that the trunk of the body then develops an antero-lateral curvature. The result is, firstly, that by the lateral inclination the border of the false ribs on the left side descends until it is in contact with the iliac crest. The larger curvature of the stomach is thus pressed upon the spleen and general mass of the intestines; secondly, by bending the body so much anteriorly a fold is formed at the upper part of the abdominal wall, and the anterior surface of the stomach follows the curve. These conditions produce a mechanical hindrance to the movements of the cardiac stomach. The function of the thoracic viscera is equally interfered with by means of the anterior curvature owing to the drawing together of the ribs and also by the descent of the left half of the diaphragm towards the upper border of the stomach. The difficulty thus afforded to respiration reacts on the heart, the contractions of which are, moreover, mechanically hindered by the distortion of the thoracic cavity. The neck is necessarily somewhat twisted, and the large vessels at the root, therefore, are submitted to a certain amount of torsion. The effect of the attitude described above is especially marked when an organic affection of the heart exists. Dr. Motais is also of opinion that this position is a strong pathogenic element protracting the duration of dyspepsia. He has found that if children who suffer from this complaint are made to assume a correct posture whilst in school the symptoms subside more rapidly than when such a precaution is not taken. The same observations are applicable to adults engaged in sedentary occupations, and Dr. Motais laid great stress on the point that the medical man, when treating cases of chronic heart or gastric disease, should give his patients directions as to the posture to be assumed when much sitting is necessary.

[1] L'Union Médicale, March 1st, 1894.

SECONDARY DEGENERATIONS IN CEREBRAL LESIONS.

IN the last number of the *Neurologisches Centralblatt* there appears a short account of Muratoff's important researches on degeneration of fibres after excision of parts of the cortex. The paper appeared, in full, in the *Archiv für Anatomie und Physiologie*. The animals operated upon were kept alive for from two to four weeks, and the examination of the results was made by the method of Marchi. Three points in particular were examined—the degenerations of the corpus callosum following removal of parts of the cortex, those of the connecting tracts and those occurring in the pyramidal tracts. The degenerated callosal fibres could be traced to the cortex of the sound hemisphere, and their number depended upon the extent of the area of cortex excised. The degeneration was always restricted to a definite part of the corpus callosum. The short connecting tracts were found, contrary to von Monakow's experience, to suffer even when only one trophic centre was removed. Of the long commissural tracts, only that was found to be affected which lies under the corpus callosum—the "fasciculus sub-callosus." The number of degenerated fibres in this also was found to depend upon the extent of the lesion, and they were restricted to the side operated upon. The fibres could be traced on the one hand to the locality of the lesion, and on the other either into the frontal or occipital lobe. The degeneration of the pyramidal tracts after a unilateral lesion of the cortex was also found to be double. This, Muratoff says, is not due to any second crossing, for the anterior commissure is quite normal, but to the transmission directly to each lateral pyramidal tract of fibres from each pyramid. The degeneration also of the facial fibres after extirpation of the face centre he was able to trace to the opposite facial nucleus. These results are of great interest. They have already been alluded to in our columns with reference to the confirmatory researches of Mellus and Sherrington in this country.

A COÖPERATIVE ASSOCIATION OF MALE NURSES.

IT is satisfactory to learn that, acting on the hint conveyed in our issue of Feb. 17th, a number of trained male nurses have united to form a coöperative organisation. The conditions which govern the working of this new society afford a further ground for satisfaction. Among these we note the following: a course of three years' training must precede admission to membership; total abstinence is obligatory, and a preference is given to life abstainers and married men with families; subscriptions are paid weekly, and profits remaining after deduction of working expenses are divided among the members in proportion to the amount earned by each individually. The nurses who have up till the present time enrolled themselves are, we understand, experienced and respectable men who have already formed more or less of a professional connexion. An organisation thus constituted possesses two evident recommendations. In the first place it makes provision for a constant supply of persons available for duty in any case of emergency which may arise, in this way obviating much uncertainty, delay, and disappointment on the part of medical men and their patients; in the second place it protects the nurse against the extortion of sweaters and sweating institutions. Such exaction has in the past been only too common. We are informed of a case in which the nurse, while attending cases of small-pox, received 37*s.* 6*d.* per week, usually for three weeks at a time, after which he passed three weeks in quarantine

paying all his own expenses, while the payment received by a parent institution for his services on each occasion was from three to three and a half guineas per week. In view of such cases as this there are manifest advantages connected with coöperation as far as the worker himself is concerned, and the invalid employer, we have reason to believe, will not find himself deceived in making trial of the skill which is thus obtainable from a new source for his relief. The Male Nurses' Temperance Coöperative Association has opened its premises at 8, Great Marylebone-street, Portland-place, W.

PRISONS AND CRIMINAL TREATMENT.

A LECTURE delivered a short time ago by Mr. William Tallack on Prisons and Criminal Treatment possesses considerable interest, both on account of the official position and practical intelligence of Mr. Tallack, and in connexion with a recent discussion on the same subject in the daily press. A prison, this authority tells us in effect, is neither a place of retribution merely nor yet an educational institution; it is a combination of both of these. The offender must be made to feel the gravity of his offence by appropriate punishment, and if deeply depraved he may, no less in the interest of others than in his own, require to be intimidated. Without this degree of severity mere training is an error of judgment. In order to achieve the double purpose nothing is more essential than the strict observance of a system of separate confinement, and this must never be confounded with the altogether different and injurious "solitary" system. Under the latter health suffered and the agony of enforced idleness often resulted in desperation and suicide. The separate method insists only upon the seclusion of prisoners from each other. The visits of other persons are directly encouraged; occupation, books, instruction are provided, and, in short, no condition is excluded which may contribute to physical or moral well-being. Without thus much of seclusion, moreover, technical industry and education alike suffer, while it is manifestly more difficult to inculcate moral or religious principles where these have to act, not upon the minds of individual offenders, but upon a phalanx of imprisoned criminals. It is a proof of the superiority of separate confinement as an aid to the reformation of character that it is found to facilitate the employment of short sentences—i.e., the work of reform is done within less time than where even moderate association is permitted. So likewise it promotes industry, for the labour of individual workers is a much less objectionable form of trade competition than the rivalry of prison gangs. Mr. Tallack refers with natural satisfaction to the success attained by this method in combination with other social forces, such as industrial schools, boarding-out, prisoners' aid societies, and the like, in decreasing our criminal population. Fifteen years ago there were 20,000 prisoners in local gaols and 10,000 convicts; now these figures have been reduced to 14,000 and 4000 respectively. His plea for further reforms, especially as regards the exemplary punishment of cases of assault, the gradual cumulation of sentences, the separate detention of first-committed prisoners, and the non-imprisonment of children, will commend itself to most readers. These measures we may regard as so many remedies of probable but as yet imperfectly proved efficiency in the treatment of the moral disease—crime—which only await the sanction of law to find those uses which their actions justify.

WE have to report with great regret the death of Mr. Henry Smith, Emeritus Professor of Surgery at King's College. Mr. Henry Smith died at Summerhill, Horsell, Surrey, on Sunday last. An obituary notice will appear in our columns next week. The funeral will take place at Horsell to-day (Friday) at 3 P.M.

WE are informed that the plans and specifications for the reconstruction of the drainage system at Christ's Hospital, submitted by the governors, have been accepted by the sanitary authority, and that the work is being actively carried on at the present time. It will be finished by the end of May, with the intention of allowing the boys to reassemble in perfect safety in the first week in June.

THE Prince of Wales will preside at the festival dinner of the Middlesex Hospital, to be held on Friday, April 13th, at the Whitehall Rooms of the Hôtel Métropole, when a special appeal will be made for funds to provide new accommodation for cancer patients. The Lord Mayor and Sheriffs of London have also promised to attend.

THE triennial festival in aid of the funds of the Charing-cross Hospital will, we are informed, be presided over by H.R.H. the Duke of Cambridge. The function will take place on May 19th, at the Whitehall-rooms, Hôtel Métropole.

THE ASSOCIATION OF FELLOWS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A MEETING of the committee of the Association of Fellows of the Royal College of Surgeons of England was held at 18, Great Cumberland-place, W., on March 21st, 1894, at 5.30 P.M. Mr. Holmes, Vice-President, in the unavoidable absence of Mr. George Pollock, President, was in the chair. There was a large attendance. The minutes of the last meeting having been read and confirmed, the honorary secretary, Mr. Percy Dunn, read letters of regret at inability to be present from certain of the members.

Mr. Holmes then pointed out the reasons which had led to the meeting being summoned. Within the past week all the Fellows of the College had received a circular inviting them to join a society which had been called "A Society of Fellows of the Royal College of Surgeons of England." With the view to placing all the facts of the case before the committee Mr. Holmes read the circular issued by the promoters of this new society. Mr. Holmes further stated that he had written to a member of the provisional committee asking for information with respect to the scheme, and in reply he had received a communication as follows:—

"The circular you have had endeavours to tell, without reservation, the reasons for forming a society of Fellows. Of course it was impossible to hold any of the preliminary meetings without some mention being made of the Association of Fellows, but there was no reference to it at the meeting held in Chandos-street on March 8th. It cannot, therefore, be said that the proposed society takes any attitude towards the Association other than that which is implied in the hope that members of the Association will accept the invitation to join it which has been issued without distinction to all the Fellows of the College. If one may judge from the hearty and widespread support with which the proposal has been received it would appear evident that the Fellows feel the need of the formation of such a society as is suggested, and I hope that before very long you yourself will consent to join it."

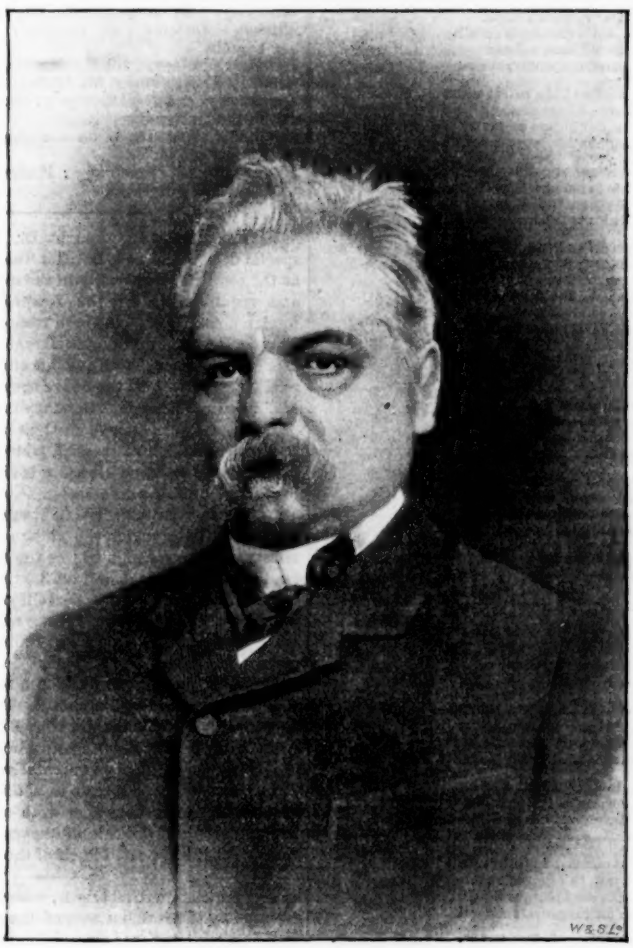
A long discussion then ensued as to the precise action which the committee, on behalf of the Association, should take under the circumstances. In the end, however, it was unanimously decided to issue a circular letter forthwith to all the Fellows of the College, stating the case for the Association. The chief points to which attention would be drawn in the letter having been drafted and agreed to, a subcommittee was appointed to arrange the final wording of the letter and for the printing and distribution of the same among the Fellows at as early a date as possible.

This concluded the business of the meeting, and the committee adjourned.

THE ELEVENTH INTERNATIONAL MEDICAL CONGRESS.

ROME, 1894.

PRESIDENT: PROFESSOR GUIDO BACCELLI,
Minister of Public Instruction in Italy.



Professor Baccelli at the age of sixty-two.[1]

GUIDONI BACCELLIO
CONGRESSUS MEDICORUM UNIVERSORUM XIMI
PRÆSIDI
MEDICUS EDINENSIS
S. P. D.

Quot, Roma, quantas pertuleris vices,
Testis fugatus de Capitolio
Gallus, triumphatumque Pyrrhi
Agmen, et ille superbus Afer,

Quem non arenis invia vastitas
Æstuque terret, nec mare naufragum,
Nec nationum vis ferarum,
Nec nivibus gravidæ dolosis,

Alpes tremendæ, quominus inferat
Ensemque et ignem et barbaricum nefas
Funestus Urbi ceu relictæ
Ab Jove numinibusque læsis;

Qui mox fatetur victus et exsulans:
"Nil Romuli non perficient duces,
Discrimen optantes supremum
Patria ne careat triumphis.

[1] For a detailed biography of Professor Baccelli, with the portrait which we here reproduce, and another portrait representing him at the age of forty, we refer our readers to a special article in our issue of Jan. 6th, 1894.

Non Marte solo læta sed altero
Custode sese roborat Urbs vetus,
Ad vestra, mandato Sibyllæ,
Confugiens, Epidaure, sacra.

Quin repererunt gratius hæc solum
Qua findit undam Tibridis insula,
Ædesque consecratur Angui
Quem penes ars maneat medendi.

Semper valebit gens ope duplici
Romana: felix bella gerit, Lupa
Fautrice; si devicta cedit,
Corda, manus reparatur Angui.

Hinc integratæ perpetua vice
Vires, et imis addita civibus
Virtus, et Æterni potita
Nominis Urbs hominum per ora!"

His usus Afer vocibus ultimis.
Sed Roma, cultu quo caput extulit
Sublime neglecto, caduca
Promeritam subiit ruinam.

Qua vi renascens Urbs redeat vetus
Ad se priorem, dicere gestiet
Clio neque oblitura motus
Regibus Allobrogum novati.

Cantemus artes hoc potius die
Quarum sub auctu te reficis, Salus,
Quæ te redonarunt Quiritem
Dis Italis patrioque cælo.

Urbs universas en! trahit hospita
Gentes, ut olim; non tamen efferas
Venationes ad videndas,
Muneraque exitiosa arenæ,

Sed summa Pacis præmia, sed bona
Quæ victor Anguis fert Epidaurius,
Sed arma, BACCELLI, sed arma
Digna Machaoniis triumphis.

Hac Æsculapi nam trieteride,
Per te resurgunt templa deo, quibus
Morbo laborantes fruantur
Et studiosa simul caterva.

Qua parte muri signifer Allobrox
Irrupit Urbem jura ferens nova,
Præcepta largiris datura
Splendidius sine vi tropæum.

Dum Tibris Etruscum in mare defluat
Flavente lapsu, stet Polyclinicum
Fulgens, tributurum salutem
Italiæ dominæque Romæ.

Salve, proborum dux probe civium!
Res unde vitam vimque recolligit
Communis, antiquosque cursus
Auspiciis iterat secundis.

Salve, bonarum cultor et artium et
Scientiarum! præside quo, velut
Daphne, reformatæ, stupescant
Frondibus insolitisque bacis.

Salve, tot inter consiliarios
Regi dicatos, digne Quiritibus
Qui disciplinam des renatis
Italiamque pares futuram!

Te mundus omnis qui medicas colit
Artes honorat, te celebrat simul
Tutamen exemplarque nostri
In melius properantis ævi.

J. P. STEELE, B.A., M.D. Edin.

Florentiæ, IX Kal. April. MDCCCXCIV.

NOTE.—This ode, in honour of the Congress and in felicitation of its distinguished President, was written by Dr. Steele for THE LANCET and presented to Professor Baccelli previously to the inauguration of the Congress.

THE PRESIDENTS OF THE SECTIONS.

Anatomy: The Senator Dr. Todaro, Professor in the Roman University.
Physiology: Dr. Angelo Mosso, Professor in the University of Turin.
General Pathology and Pathological Anatomy: Dr. Giulio Bizzozero, Professor in the University of Turin.
Internal Medicine: Dr. Guido Baccelli, Minister of Public Instruction.
Pædiatry: Professor A. Blasi.
Psychiatry, Neuropathology, and Criminal Anthropology: Professor Lombroso of the University of Turin.
Surgery and Orthopædics: The Senator, Professor Durante of the University of Rome.
Obstetrics and Gynæcology: Dr. E. Pasquali, Professor in the University of Rome.
Laryngology: Dr. F. Massei, Professor in the University of Naples.
Otology: Dr. E. De Rossi, Professor in the University of Rome.
Ophthalmology: Dr. G. Reymond, Professor in the University of Turin.
Odontology: Dr. A. Coulliaux, surgeon-dentist of Milan.
Military Medicine and Surgery: Major-General Dr. G. Cipolla.
Hygiene: Professor, the Commendatore, L. Pagliani.
Sanitary Engineering: Dr. L. Pagliani.
Dermatology and Syphilography: Dr. T. De Amicis, Professor in the University of Naples.
Legal Medicine: Dr. L. de Crecchio, Professor in the University of Naples.
Hydrology and Climatology: Professor G. S. Vinaj of the University of Turin.

With courteous forethought Dr. Baccelli has nominated special delegations to look after the interests, professionally at the sections and socially in the matter of private residence and requirements, of the representatives of the various foreign committees. In these respects the representatives of France, Russia, Turkey, and Egypt will be under the wing of Professor F. La Torre and his staff, who may be known in public and private by the badge they wear—namely, the arms of France and Russia. Germany and the kindred Teutonic countries may consider themselves as under the protection of Professor Gualdi and his staff, whose badge will be the arms of Germany. Austria-Hungary is similarly taken care of by Professor Romiti, whose insignia are the Austro-Hungarian arms. Great Britain, Ireland, and the United States of America will be under the charge of Dr. Prochet and his assistants, whose badge will be the armorial bearings of England. Spain, Portugal, and the South-American Republics will be under the wing of Dr. Cervelli and his subordinates, who will be recognised by wearing the arms of Spain; and finally Italy and the neighbouring Italian-speaking nationalities (Istria, The Tyrol, Trent, Ticino, Savoy, and Nice) will look to Professor Biondi and Dr. Rocca for what advice, information or assistance they may want. This is a most considerate as well as hospitable detail of Dr. Baccelli's organisation and will greatly promote the comfort and expedite the business of the various national representatives, who might otherwise be at a loss where to turn to in a difficulty; and as upwards of four thousand delegates were present in Rome by the beginning of the week, it will be gathered that the attention was one that has proved itself of the utmost service.

The Policlinico Umberto I., where the various sections are transacting the real business of the Congress, is an imposing building, with its *façade*, consisting so far (for it is unfinished) of seven separate pavilions, of which the central and largest one is used as an administrative department. It stands just without the Porta Via, on the spot occupied by the ancient Temple of Mars, and is backed by the snow-crowned Apennines. But its site has other recommendations beyond its æsthetic and sentimental qualities; the building can be reached in a quarter of an hour from the centre of the city, and special lines of omnibuses and tramcars have been arranged to run to its doors in connexion with the regular city lines. To meet the convenience of the *Congressista* post- and telegraph-offices, a telephone, waiting-rooms, and a restaurant have been provided within its walls.

The ladies attending the Congress have not been forgotten. The King and Queen of Italy arranged to bring together a body of ladies to consider in what manner the lady representatives and guests could be entertained. Signorina Maria Gasco was chosen as President, and it would be difficult to find a more accomplished and charming lady to undertake such a post. With her are working nearly one hundred ladies of all nations, the predominance being given to the English element. After three meetings a concise programme was drawn up, and it was decided that five ladies, speaking different languages, should take strangers out for two hours every morning and afternoon to visit the sights of Rome. A large drawing-room in a central part has been opened where five ladies are to be always present to be of use if necessary to their guests.

The bustle and clamour in the streets of Rome, usually so quiet a city, have not been confined to them. One of the most beautiful buildings in the town—the museum for the exhibition of works of art, generally known as the Palace of Fine Arts—has been lent by the Municipality of Rome for the reception of an International Exhibition of Medicine and Hygiene, and, as a consequence, is the scene of all the turmoil inseparable from the work of organisation. Energy is being displayed on all hands in providing room for the late arrivals—by no means few in number. It appears that much difficulty has had to be overcome before getting the exhibition to the state of forwardness to which it has already been brought. Though many of the exhibits were forwarded early, many exhibitors — the English in particular — did not respond well, although adequate notice and particulars relating to the exhibition had been sent to the leading firms. Difficulty has also been experienced in obtaining medical men familiar with this sort of work to lend their assistance.

All these difficulties, however, have been overcome by the indomitable perseverance and energy of Professor Pagliani, the Director-General of the Sanitary Department of Italy, admirably seconded by the energy, skill, and experience of Dr. Sambon.

We hear of many distinguished foreigners coming from all parts of the world. It is expected that the numbers will exceed 6000 Members and Associates.

At one time it was thought that the President was to give a long classical address, but he informed our representative, to whom he extended the utmost courtesy, as did all his coadjutors, that this was not practicable in consequence of the presence of Royalty, who did not like long ceremonies.

On Wednesday evening the Committee of Organisation gave a reception to all the members of the Congress, and the ladies who accompanied them, at the Palace of the International Exhibition in the Via Nazionale.

We cannot forbear at this early stage to acknowledge here our obligations to the distinguished President, Dr. Baccelli (who will live in the annals alike of medicine, of statesmanship, and of antiquarian history), for his courtesy and his welcome to our representatives now in Rome, and we take this opportunity to wish the highest prosperity to the Congress of which he is the honoured head.

(FROM A SPECIAL CORRESPONDENT.)

ROME, *Sunday*.

IT is too soon at the time of writing to speak of the scientific aspects and advantages of the International Medical Congress in Rome. We are only as yet at the ante-Congress stage of the great medical event; but, even so, we are able to see the enormous importance of such occurrences to the individual members of the profession who take part in them and to the nations which they represent. The meeting takes place in a city in which other counsels have prevailed than those of medicine, with what results to the human race let history tell. The monuments of Pagan Rome and of Christian Rome alike, taken in connexion with the social conditions of the people, testify to the inadequacy of such counsels for the solution of the great problems that affect mankind of whatever nation. The true Christianity that is for the "healing of the nations" will have more respect for the great science, the professors of which are now being entertained in the Eternal City, than it has had as yet from any of the Governments of the world, even when Christian. The progress of medicine in Italy, has been, perhaps, rather retarded than advanced by some of the special teachings of Roman theology; but the times of this hindrance are now well nigh over, and in Italy, as elsewhere, the cultivation of sound medicine is proceeding by leaps and bounds, and is felt to be essential to the progress of the nation alike in health and virtue. A very cursory glance at the programme is sufficient to show that the Italian members of the Congress are taking a full share in its proceedings and in the advancement of the art of medicine and of surgery, and that the members of the medical profession in Italy will have much to say for the liberation of the human mind and the encouragement of enlightened legislation. I may have more to say next week as to such services on their part and those of their *confrères* of other countries. Meantime, and writing in Rome a few days before the opening of the great meeting, I am greatly impressed with the advantages of these international congresses to all who gather themselves together. Medical men are as little apt to be narrow in their conceptions of life and morals as any class of men, but even they are sometimes insular and parochial in their views, and need to see other countries and rub shoulders with men of other nationalities. It was well to-day for Englishmen, Irishmen, and Scotchmen to find themselves inside the walls of St. Peter's, and to study together a form of religion to which many of them are strangers, and which has yet profoundly and extensively affected the history of Europe. All along the road compatriots have been pleasantly colliding with one another, and the hotels of Rome are now strained to the utmost to accommodate them and other members of the Congress. Everything in this country is so new to them. Yesterday, as I came along the road, I was pleasantly surprised with cactuses, palm trees, orange and lemon trees in the gardens of Genoa, and the kindly night, with a fine moon and a bright starlit sky, made me think but little of the dangers of the Campagna. There is a goodly mixture of men from various parts of Great Britain—England and the provinces, Scotland, and Ireland. Physicians and surgeons of consulting ranks and general practitioners are all here, making more intimate acquaintance with each other, as well as the acquaintance of another race and city, with few parallels for importance and history in the annals of the world. The weather is glorious in the extreme. The wind, indeed, is cold, and needs to be guarded against, but the brightness of the sky and the clearness of the atmosphere would invest a less momentous place than Rome with an appearance of interest and grandeur.

One point of difference between the Congress at Rome and the Berlin Congress is very striking—there is a certain absence of excitement. No great note of expectation has been struck. At Berlin it will be remembered that a very general hope was felt that Professor Koch would use the opportunity of an assembly of his scientific brethren to demonstrate the possibility of a practical treatment—preventive and curative—for phthisis. No such great emotion—no such predominant idea—is to be noticed in connexion with the communications to be read at the present Congress; but it does not follow that it will be less useful or serve less to advance the efficiency of the medical art. As a profession, that of medicine in Italy is already overstocked, as it is elsewhere, and the pursuit of it is scarcely explained by its profitableness. The education demanded of its devotees involves a curriculum extending over six years; but it is not very costly, and the examinations are said to be not too exacting. The profession of pharmacy is well stocked, and a considerable curriculum and severe examination are exacted of its members; the consequence is that it enters partly into competition with the medical profession, though the members of the

latter do not disperse their own medicines or enter into any competition with pharmacists. It might be thought that, having the whole field of dispensing to themselves, the pharmacists of Italy would desist from prescribing, and the best of them probably do not cultivate it much. Some have an understanding with a medical practitioner to come at certain hours of the day to their shops and prescribe for poorer customers, for whom otherwise the druggist would have to prescribe. It cannot be doubted that one effect of the Congress will be to emphasise the gravity and the promise of medicine in its three great branches, and to enhance for it the respect of nations.

EXHIBITION OF SANITARY AND MEDICAL APPLIANCES.

(By Telegraph from our Special Correspondent at the Congress.)

THE International Exhibition of Medicine and Hygiene in connexion with the International Medical Congress was formally opened on Wednesday morning in the Palace of Fine Arts. The ceremony was attended by the following distinguished Italian citizens: the Prime Minister, Signor Crispi; the Minister of Public Instruction and President of the Congress, Signor Baccelli; the Mayor of Rome; Professor Pagliani, Director-General of the Italian State Sanitary Department and *Tesoriere* of the Congress; and Dr. Sambon, who, with Signor Pagliani, is responsible for the management of this exhibition—the greatest exhibition of sanitary and medical appliances that has yet been brought together. The number and quality of the exhibits, no less than the position occupied in the scientific world by the exhibition, augurs exceedingly well for the future Congress.

The collection of exhibits is larger and more varied than any similar collection at former international congresses. The number of exhibitors exceeds 650, and this number would have been even greater had not the committee been compelled to refuse very many tardy applications. The exhibition extends over the Palace of Laborel and Areta. The space immediately around this building has been brought into requisition to house the exhibits.

In such a collection it is almost invidious to single out a few things for special mention; but from the antiquarian point of view no one could fail to be deeply interested in the ancient medical manuscripts in many languages which have been brought together from various State libraries by M. Biagi. These rare records number some 600, and many of them contain the most beautiful engravings and miniatures. The collection has been insured for 1,000,000 francs. There is also a splendid collection of antique medical instruments, chiefly Roman and Neapolitan, as well as instruments giving material evidence of the skill of the primeval Egyptians in so modern a branch of therapeutics as dentistry. Among the specimens of votive offerings is a small and undoubtedly ancient statue of Isis, on the back of which, by a curious coincidence, has been discovered the word Crispi.

Germany has the honour among the nations of having sent the largest contribution to the exhibition. The general health of Germany, with the means to maintain it, are well illustrated. They also send a fine library of modern medicine. The War Office of Germany exhibits two large sheds containing the most modern kind of appliances for aiding the wounded in time of war. One of these is a hospital barrack, another a hospital tent, and a third represents an operating theatre. The Austrian Government has also representative exhibits. The French Government, which up to the last few days had given no sign of sending anything, has forwarded a special delegate with models, stretchers, and barracks for aiding the wounded in war. The Red Cross Societies have also a similar exhibition of a practical nature, and the Order of St. John and the Red Cross has an exhibition at the Policlinico in connexion with the ambulance service in Italy.

The sanitary arrangements of Italian towns are illustrated by excellent plans and drawings exhibited for the purposes of comparison alongside of diagrams and descriptions of the sanitation of other towns of Europe.

The English exhibits show up very poorly amidst those of other nations. The chief exhibitors I noticed were Burroughs, Wellcome, and Co; Young Pentland, who shows many medical books; and Watson and Sons, who show some valuable microscopes. Among other English names are Armour and Co., the Anglo-Swiss Condensed Milk Company, Brand's Extract, Hertz and Collingwood, Shanks and Co.

There are also specimens of the disinfecting apparatus used in the lazarettos, of the masks that were used during times of plague, and many relics of mediæval and what I may term superstitious medicine.

I have only to repeat that, in spite of the poor show made by my own country, this exhibition is the best and most important of its kind that has yet been held in connexion with a medical congress. Its strong points are the archæological collection, the surgical instruments, and the bacteriological appliances.

OPENING OF THE CONGRESS.

(By Telegraph from our Special Correspondent at the Congress.)

ON Thursday morning, in truly lovely Italian weather, the Theatre Costanzi was besieged by an overwhelming crowd. The arrangements for seating and the general organisation were not satisfactory, though I can hardly express surprise that this should have been so, as the confusion was necessarily entailed by the crowd. The Congress is estimated to include seven thousand members. Those who came early, especially if they had provided themselves beforehand with tickets, were very fortunate.

The theatre presented a very imposing sight as the vast assembly arose to salute the entrance of His Majesty, King Humbert, who was accompanied by his gracious Consort, Queen Margherita, Signor Crispi, the Premier, the Mayor of Rome, and certain of the national delegates.

Signor Crispi, addressing the members, welcomed the Congress as being representative of a great progressional movement in modern life, reminding them that for Rome to be again in the van of progress was for Rome to assume her ancient position among the cities of the world.

Signor Baccelli then welcomed the delegates and members who had assembled from all quarters of the world under his presidency, with the common object of studying the amelioration of human suffering. He did not enter into a long disquisition, but confined himself to words of general greeting. He mentioned the support that King Humbert and his Queen had given to the undertaking, citing the interest which Queen Margherita had for many years taken in the development and progress of hospitals of the Red Cross and of all ambulance services.

Following upon Signor Baccelli, the Mayor of Rome spoke, also Professor Virchow and Signor Maragliano. Sir William MacCormac then, speaking in the name of England, thanked the great Italian nation for her cordial welcome to her foreign guests.

His Majesty King Humbert, at his own request, was presented to certain representative members, including Sir William Mac Cormac and Brigade-Surgeon-Lieutenant-Colonel Notter, the delegate from the English Army Medical Staff.

The foreign representatives have already been announced from time to time in THE LANCET, according as they were appointed. It will be convenient, however, to recapitulate the entire body here. We follow as nearly as possible the alphabetical order:—

Argentine Republic is officially represented by Signor Costa Alberto, Surgeon-Major in the Army Medical Corps, and by Dr. Francesco Silvagna for the department of Hygiene.

Austria is represented by Dr. Josef Sgauer of the Ministry of Marine, and by Dr. Maurice Nagy de Roth-Kreuz of the Ministry of War.

Australia by Dr. James Edwin Matthews for the Government of Victoria (Melbourne), and by Dr. Bolton H. Corney of the Fiji Islands.

Belgium is represented by the Senator Dr. Crocq and Dr. Dubois Haveseit of the University of Brussels; by Dr. Vleminckx, secretary to the Supina Board of Health; and by Drs. Capart, Bribosia *(fils)*, and Jacobs, of the Brussels School.
Brazil by Professor Paulo de Carvalho of Rio Janiero.
Bulgaria: Drs. Puskulieff and Zolotovich of Sophia.
Chili: Dr. Alessandro del Rio.
Columbia: Drs. Don J. Guttierrez Pouce, Orias Arqaez, and Noguera.
Croatia: Dr. Vittorio Struppi.
Denmark: Professor C. G. Salomonson, for the Government; Drs. J. C. Moller, A. Paulsen, C. Fridrichsen, and H. C. von Karten, for the Ministry of War; and Dr. Berg, Staff Surgeon, for the Ministry of Marine.
Ecuador: Drs. Riccardo Cucalon, Riccardo Ortiz, and Mariano Selliny.
Egypt: Dr. Hassan Pasha Mahmond.
France: Drs. Léon Le Fort, Vice-President of the Academy of Medicine; Bergeron, Perpetual Secretary of the Medical Academy; M. Baudouin, Secretary of the Medical Press Association; Brouardel, Charpentier, and Professor Pinard, for the Government; Colonel Bertrand, for the Ministry of Marine; Drs. Cheveran, Proust, Gatiel, and Cornil, for the Ministry of the Interior; General Colin, Helsch, Strauss, and Antony, surgeon-major, for the Ministry of War; Drs. Treille and Calnette, for the Ministry of Commerce; and Drs. Vignel, Richet, Brouchard, Gilbert, Galle, Gabriel, Cornil, Chauveau, and the Advocate Felix Devry, for the Ministry of Public Instruction.
Germany: Dr. von Coler and Dr. Sommer for the Ministry of War; Drs. Wenzel and Bronkoff for the German Navy; Binz for the Ministry of Public Instruction; Strassmann and Margraf for the Town Council of Berlin; and Riegner Oscar for the Civic Hospital of Breslau.
Bavaria: Drs. Ritt, von Kerchensteiner, A. Vogl, and Professor Ziemssen.
Saxony: Dr. Müller for the Ministry of War and Professors W. His and Birch-Hirschfeld for the Ministry of Public Instruction.
Japan: Dr. Yoschindo Inoko, Professor of Medicine in the University of Tokio.
The East Indies: Brigade-Surgeon-Lieutenant-Colonel Douglas D. Cunningham for the Viceroy and Surgeon-Major Smyth for the Government of Madras.
Great Britain: Brigade-Surgeon-Lieutenant-Colonel J. L. Notter for the War Office and Inspector-General Macdonald for the Admiralty.[2]
Norway: Dr. F. Hanlow, of the Army Medical Staff.
Holland: Dr. B. J. Stokvis, for the Government, and Drs. van Lier and L. Brimendik, for the Ministry of War.
Paraguay: Drs. Ettore Velasquez and Edoardo Tagliavio.
Peru: Dr. Aurelio Alarco da Lima.
Roumania: Dr. Felix, for the Government; Dr. Victor Babes, for the Ministry of Instruction; Professor Demosthene, for the Ministry of War; and Drs. G. Severano and N. Gerorgescu, for the City of Bucharest.
Spain: The Senator Angelo Fernandez Caro, for the Ministry of Marine; and Drs. Alessandro San Martin and Gioacchino Berracco.
Canada: Dr. W. Tobin of Halifax.
The United States: Drs. F. L. du Bois and C. A. Siegfried, for the Ministry of War; and Dr. H. W. Austin, for the Ministry of the Treasury.
Sweden: Professors Alaric Frithioth and Jakob Rossander.
Switzerland: Drs. Schmidt, Albrecht, and Haffer.
Turkey: Dr. Essad Bey, Adjutant-Major to the Sultan; Colonel Behdjeh Bey, M.D.; and Dr. Millingen.
Hungary: Drs. Frederic Horányi di Tolscon, Ludwig Csatary de Csatar, Josef Fodor de Galantha, Karl Ketly, and Andrea Hogges, for the Superior Council of Public Health; Josef Bernolak de Haraszt, for the Ministry of War; Cornelius Clyzar and Samuel Papp, for the Ministry of the Interior; and Professor Ludwig, for the Ministry of Public Instruction.
Venezuela: Drs. Elia Rodrigues, Francesco A. Risquez, and Emilia Conde Flores.
The Principality of Monaco: Dr. Louis Colignon.
The Republic of San Marino: Dr. Oscar Lancelliotti.

[2] As the names of the delegates from the various universities, colleges, societies, and public bodies of the United Kingdom to the Congress have already and so recently appeared in our columns, we do not repeat them.

ROME, AND HOW TO SEE IT.

(Concluded from page 761)

THE Irishman who, in the Piazza di Spagna, "threw himself into a hollow square to resist charges of cabs," typifies the ordinary tourist on his first visit to Rome. He is literally beset by "objects of interest" and "places to see" till, in self-defence, he assumes a defiant attitude towards them all, and often leaves the city without the British satisfaction of having "done it." We have endeavoured to save him from this "policy of despair," and, by economising his time and attention, to make him fairly familiar with most that is characteristic of Rome and its epochs. We have thus reviewed the classical stratum of interest, dipped into the early Christian, and taken a comprehensive glance at the mediæval and Renaissance stratum, particularly on its artistic side. The day or two we have thus "contracted out" of the limited time allowed us we may devote to the environs, hardly less interesting than the city itself, very attractive in natural beauty, and intimately associated with the history of Rome from the earliest to the latest period.

Let us run out to the Villa of Hadrian, a trip easily manageable within the day, and valuable in itself as supplementing the experience and the impressions formed in the Palace of the Cæsars.

The steam tramway to Tivoli places us at the Villa in little over an hour, and would do it in less but for the wait at the Aquæ Albulæ, or sulphur stream, redolent to this day of odours that recall the chemistry class-room, and familiar to us by poetic allusion (particularly in Martial) and in such records of Italian journeys as those delightful ones in "Gray's Letters."

Anything more magnificent than the Villa, even in its ruined and not completely excavated state, it is impossible to conceive. It covered an area and harboured a population that made it more of a town than a rural retreat. And here be it remarked that the Romans had little or nothing of that feeling for the country—that love of nature for its own sake—that characterises the northern races. Their notion of rural life was rather "escape from town," with its cares and its worries, its bustle and its noise; and their ideal of a villa was that of a house with every civic comfort and appurtenance, but with none of the above-named civic drawbacks. Analyse the outbursts in Virgil and Horace as to the pleasures of country life, and the criticism just made will be found correct. Such sentiments as that, for instance, of Byron—

> "There is a pleasure in the pathless woods,
> There is a rapture on the lonely shore,"

were contrary to their genius, a fact which explains the circumstance that those Alpine passes and peaks which possess such an intoxicating charm for the northerner are mentioned by none of the refined and cultured Consuls and generals of ancient Rome, who never marched over or under them without some epithet of repulsion or horror. But we are starting a question already threshed out in this journal;[1] and now to the Villa itself. It is the most impressive ruin in Italy. It possessed a lyceum, an academy where philosophers discoursed on the "summum bonum" and the "immortality of the soul," it had a pœcilé, or great hall adorned with frescoes on the model of the στοὰ ἡ ποικίλη at Athens, a Vale of Tempe, a Serapeon of Canopus imitated from that at Alexandria, an ornamental stream called Euripus, libraries (Greek and Latin), theatres (also Greek and Latin), thermæ, or hot baths (vapour, dry air, and water), of every variety, a hippodrome, the Imperial Palace, a slaves' quarter, barracks for the Prætorians, a Tartarus, or lower world, Elysian fields, and temples to many deities. All or nearly all these have been excavated and defined with consummate skill by Italian archæologists, notably the Cavaliere Lanciani, and a couple of hours spent in its solitude and silence will prove the most impressive and solemnising the visitor is likely to spend in Italy.

If time permit he may take the next steam-tram to Tivoli, if only for a glimpse at Horace's "præceps Anio" and Macaulay's

> "Green steeps whence Anio leaps
> In floods of snow-white foam,"

winding up with half an hour in the Villa d'Este, whose terrace commands a view of St. Peter's, eighteen miles off, finer, perhaps, than can be enjoyed from any other point

[1] THE LANCET, July 29th, 1893, pp. 252-4.

within the Agro Romano. The cupola, Michel Angelo's "Pantheon hung in heaven," towers over the city and dwarfs every other edifice within its walls.

Another excursion may be made to the Alban Hills—easily accessible by train and delightful for the natural beauty they reveal and the historic associations they enshrine. The scenes not to be omitted are Frascati and the ancient Tusculum which dominates it with the ruins of Cicero's magnificent "Tusculanum"; the Villa Aldobrandini and its noble, thought-inspiring view from the terrace; the old monastery of Grotta Ferrata; Marino and its wild wood; the Alban Lake, coiled up within its mountain basin, sad and weird as a nocturne of Chopin; the Alban Mount (which need not be ascended); then Castel Gandolfo—the long-forsaken summer residence of the Popes,—with its glorious Villa Barberini, famous for its terrace, which commands an inexpressibly magnificent view of the Latin shore and the intervening Campagna; then the great viaduct to Aricia; then Genzano and the lovely Lake Nemi; then Cività Lavinia, whence a view is obtained of the Volscian Hills gleaming under the westering sun like green bronze, on which sparkles like a diamond the township of Sermoneta; and, far below, the old Appian Way with its Three Taverns, where the brethren from Rome met St. Paul on his journey up from Puteoli.

All this will take an entire day; or the visitor may prefer a trip to the Latin shore and Ostia, the old seaport of Rome, with its splendid excavations conducted under the eye of Lanciani. The drive down the windings of the Tiber is one of the most solemnly impressive experiences to be enjoyed in the whole Campagna, replete at every turn with interest if only the visitor has the companionship of an archæologist or well-informed guide. Arrived at Old Ostia, a desolate expanse of hillocks crested with ruins, which also run in and out between them, he will see evidences of the most speaking kind of the seafaring character of the town and its population. He will come upon traces of sailors' homes and bonders' houses, where, up to the neck in sand, lie some dozen gigantic *dolia* or earthenware casks for wine or oil or grain, the capacity of each stamped in bold, legible characters on the upper rim; he will traverse the deserted halls of a marine palace, with its atrium, peristylium, and triclinium, its baths and its private chapel to Mithras (Sol Invictus); he will see the ruins of an arsenal and of a grand temple to Jove, in whose *cella* the Saracen Dirk Hatteraick has often bivouacked in his marauding descents on the coast. The interest becomes almost painful as the visitor conjures up in his mind's eye (with the assistance of Ary Scheffer's painting) the parting of St. Augustine from his mother Monica, and murmurs to himself the well-known passage, couched in African Latinity, where the scene is described in the "Confessions." On the return from this weirdly fascinating spot, a *détour* is usually made to Castel Fusano, on or near the site of Pliny's Villa, so charmingly described in the "Letters"; and there, under a canopy of pine and ilex, fragrant with wild violets and the breath of the quickly advancing spring, he saunters down to the sea, and suddenly surmounting a slope of sand he sees the blue rollers of the Mediterranean as they break on the shore, "lonely, solemn, and monotonous," which Professor Sellar finely compares to the lift and cadence of the Lucretian hexameter. The drive home in the afternoon takes him, just as he enters the city, past that pyramid of Caius Cestius already described as having witnessed St. Paul's exit from Rome to his place of martyrdom at the Tre Fontane, and amid the sweet jangle of bells pealing forth the "Ave Maria" he threads the thronged Roman streets *en route* to his hotel.

With this our sketch of "How to See Rome" must conclude. Our object will have been attained if the reader grasps intelligently and retains profitably the impressions with which the selected places and objects are charged. He will form an ardent wish to repeat the visit and to look upon a periodical return to Rome as among the most soothing and soul-satisfying experiences by which he can dull the edge of anxiety or care and exorcise the prosaic influences of this workaday world.

ROYAL BRITISH NURSES' ASSOCIATION.—A lecture, entitled "Nurses, their Recreation and their Work," will be delivered under the auspices of this association by Miss Isla Stewart, Matron and Superintendent of Nurses, St. Bartholomew's Hospital, to-day (Friday), at 3, Hanover-square, W., at 8 P.M.

THE COUNCIL OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND AND REGULAR MEETINGS OF THE FELLOWS OF THE COLLEGE.

Now that regular meetings of the Fellows of the College have been instituted by the Council the time is opportune for referring to the regulations which have been adopted by the Council for their orderly conduct.

At the annual meeting of the Association of Fellows of the Royal College of Surgeons held in June, 1893, the following resolution was unanimously adopted: "That the Council of the Royal College of Surgeons of England be asked to arrange that the meetings of the Fellows separately from the Members be summoned regularly and be properly organised after the model of Convocation of the University of London." This resolution was discussed at the October meeting of the Council of the College and resulted in the appointment of a committee to consider the desirability of convening regular meetings of Fellows for the consideration of questions referred to them by the Council or initiated by themselves, to draw up a scheme of organisation for them, if they were considered desirable, and to report on the resolution itself. The report of the committee affirming the desirability of convening regular meetings and containing a scheme of organisation was presented to the Council on Dec. 7th, was then fully discussed and, with slight modifications, adopted. At the same time the committee was instructed to put their recommendations into a form suitable for incorporation amongst the regulations of the Council. In this form they were presented to the Council and adopted on Jan. 11th, 1894. The substance of these regulations was published in THE LANCET of Jan. 13th. They may be usefully compared with the recommendations on the same subject contained in the report of the committee of the Association of Fellows on the relation of the Fellows of the Royal College of Surgeons to the Council which were published in THE LANCET some weeks previously. After affirming that the meetings are for consultative purposes only and can have no corporate efficacy, the adopted regulations provide for two regular meetings of the Fellows, one on the first Thursday in January and the other on the first Thursday in July after the annual election to the Council on that day. Other meetings may be summoned by the Council with or without a requisition from the Fellows. Such requisition must be signed by at least thirty Fellows and specify the object or objects of the meeting. The subjects to be considered at the meetings are to be either matters referred to the meetings by the Council or motions introduced by Fellows of which twenty-one days' notice has been given, and which have been accepted as being in order by the President of the College. The President, or one of the Vice-Presidents, or in their absence the senior member of the Council, is to be the chairman of the meetings, and the Secretary of the College or his representative is to act as secretary in relation to the business of the meetings, to issue notices and agenda to the Fellows and to keep minutes of the proceedings. The regulation concerning the quorum we quote *in extenso*: "The quorum of each meeting shall be thirty, and if at the expiration of fifteen minutes from the hour for which the meeting has been summoned a quorum be not present the meeting shall not take place. If after the commencement of the meeting it shall be found, upon a count, that a quorum be not present the meeting shall be dissolved."

We believe that it was at first proposed to make the quorum forty, and that thirty was only substituted after a close division. It appeared to be assumed that the twenty-four members of Council would attend these meetings, and therefore it was regarded as necessary to require at least sixteen other Fellows to be present. This assumption, however, is not tenable, for it is rarely that the Council attends in anything like full strength, and to make so large a quorum might prove prohibitive of a meeting, for if the Council generally did not like the subjects which were to be discussed at a meeting they could at any moment put an end to the meeting

either by staying away or by walking out. The committee of the Association of Fellows suggested twenty-five as a quorum and would have made the number smaller but for the fear that the Council would not accept the suggestion. There is no virtue or utility in making the quorum high. The object of the meetings of the Fellows is to give the Fellows the opportunity of making their views known to the Council, and to enable those Fellows who take special interest in any matter to set forth their opinions. This can be done as well in a small as in a large assembly, and the nature of the engagements of the Fellows renders it unlikely that at any meeting devoid of special interest any considerable number will be able to attend. Moreover, resolutions passed have no binding force and it is obvious that if the members of the Council present at any meeting should exceed the number of Fellows not on the Council an obnoxious motion might be thrown out by the votes of the Council itself. There is no reason why members of the Council should not vote if they feel so disposed, for as at the first and recent meeting the members of the Council, save the President and Vice-Presidents, will sit, not in the well, but with the other Fellows in the body of the theatre. The Association of Fellows suggested a regulation to this effect—viz., "That it shall be lawful for the Fellows in meeting assembled to appoint an annual committee or other committees to consider and report on subjects referred to them, and to confer, when necessary, with the Council of the College." It was presumed that there might be many subjects of interest to the Fellows which it would be desirable to refer to a representative committee for full consideration and report, and which could not at once be dealt with satisfactorily by the whole body of Fellows. It was hoped by the committee of the Association that the appointment of such an Annual Committee would act as a bond of union among the Fellows and lead to the formulation of well-considered measures of reform to be embodied in a new Charter. The terms of the resolution passed by the Association in June, 1893, and quoted at the commencement of this article, in favour of meetings of the Fellows organised after the model of Convocation of the University of London, were, we believe, intended to carry with them the desirability of such meetings being provided for by Charter as at the University, and having the power to appoint a committee like the Annual Committee. We believe that there is nothing to prevent the Fellows from forming a committee, but it is very obvious that neither the decisions of the Fellows in meeting assembled nor the reports of a committee of Fellows appointed by such meeting will carry with them the same weight as they would do if these measures were authorised by Charter. That the Fellows ere long will be asking for a new Charter we have little doubt, for the institution of these regular meetings must greatly quicken the interest of the Fellows in College politics, and the existence of two organisations like the Association of Fellows and the Society of Fellows will tend to rouse the Fellows of the College from that apathetic condition into which professional bodies of men destitute of power and organisation are too apt to fall. It was, we are informed, felt that in mixed meetings of Fellows and Members the Fellows were at a disadvantage in attempting to discuss matters of special interest to their own body, and that there was always the liability that they might be outvoted by the Members or of their voice being lost in the contest of Members of the College with the Council. It must not be forgotten, however, that the assembling of the body corporate—the Fellows, Members and Council—will be as necessary and obligatory as ever when any question of importance arises concerning the constitution or external relations of the College, and the report of the committee of the Association of Fellows contains a very important stipulation founded on a fundamental article that the meetings of Fellows should not be allowed in any way to interfere with or supersede the annual meeting of Fellows and Members at which the annual report from the Council is presented and discussed, as well as a second original or fundamental article of the Association adopted in 1884 to the effect "that no alteration in the constitution and external relations of the College shall be effected without the consent of the body corporate convened to discuss such alteration." We are glad to find that the Association steadily adheres to these fundamental articles and does not allow them to be lost sight of amid the later developments of collegiate politics. Until such fundamental articles are embodied in a new Charter there will always exist some danger that they may be neglected or forgotten.

THE INTERNATIONAL SANITARY CONFERENCE OF PARIS.

WE learn that the International Sanitary Conference of Paris has concluded the main portion of its labours, and that after the Easter adjournment the final meetings will be held with a view of embodying the conclusions arrived at in a formal convention. Whether any such convention will be actually signed by the majority of the delegates assembled in Paris remains to be seen. As we have before indicated, the work of the Conference was divided into three main stages. One dealt with the prevention of cholera in its passage from the East, by means of the pilgrimage, into the Red Sea, and thence, by pilgrims returning, into the basin of the Mediterranean; the second had to do with the control of the disease in its assumed passage by means of the Persian Gulf into Mesopotamia and neighbouring countries, where it was again looked upon as a danger to Europe; and, lastly, arrangements having been proposed by which the march of cholera along these routes was to be held in check, it still remained to be decided what were the means that were to be utilised in promoting the schemes laid down and at whose cost the work was to be carried out.

Owing to the engagement entered into at the commencement of the Conference, to the effect that its decisions were not to be divulged until the Convention had been drawn up, the actual details decided on have not been made public; but very general satisfaction is expressed at the advance that has been made by way of adopting measures of prevention at the commencement of the several journeys by sea towards the holy places in Arabia, and at the elimination of some of the more antiquated and vexatious restrictions to which the pilgrims have hitherto been subjected before they were allowed to land at Jeddah and to begin their march towards Mecca. Unfortunately, Turkey and the administration of the Council of Constantinople have, however, to be reckoned with before new and more reasonable measures can be put into operation; and it is pretty well known that the more lengthened and vexatious of the hitherto existing restrictions have been maintained because the pecuniary taxes imposed under the auspices of Constantinople have largely served to fill the coffers at the capital of the Ottoman empire. Decisions alone will therefore not suffice for the inauguration of a new era. Turkey has territorial rights in the countries in question; her Government clings to those rights with a tenacity that receives its explanation in part by reason of the financial interests involved, and nothing short of the strongest pressure exercised with a unanimous voice is likely to force out of the Ottoman Government anything more than a renewal of a series of everlasting promises to do everything that is necessary and to spend any amount of money in carrying out the task of putting everything that is in disorder into the most perfect condition of order from a sanitary point of view.

Much interest, therefore, centres in the attitude of Turkey; and thus far it would seem that the Ottoman representatives have done little more than watch the proceedings, make any number of professions of good intentions, and pledge themselves to absolutely nothing. This is an attitude that would seem to involve their refusal to sign any convention, and hence unanimity in that sense can hardly be expected; indeed, we doubt if it ever was expected, even by the most sanguine of those who entered on the labours of the Conference. But if there be anything like a general unanimity apart from Turkey the case will be one for the exercise of distinct and united pressure by the civilised nations of the world upon a Government which has rarely entered upon any new line of progress except as the result of such pressure. If ever the exercise of pressure was called for it is with regard to the conditions under which Turkey manages the Mecca pilgrimage from the moment when the pilgrims come within her territory and within the control of her officials or of the officials of the Constantinople Council. Last year some 60,000 pilgrims are believed to have lost their lives in connexion with the Great Pilgrimage of that year, and such a waste of human life ought not again to be tolerated. The circumstances were also the more culpable, because it cannot even be suggested that cholera was imported from beyond the sea by newly arrived pilgrims; it is, indeed, well known that the disease was already existing in the Yemen country

to the south of Arabia, and that its diffusion in a virulent and epidemic form was due to the filthy conditions to which the pilgrims were subjected, to the utter want of anything approaching an effective sanitary administration, and to the cruel neglect of those who sickened from the disease.

India is often referred to as the nursery of cholera, and we have no intention of protesting either against this view or of suggesting that everything has been done in India that ought to be done in order to limit and control the spread of that disease; but the Indian Government have at least shown that, even in a country where cholera is always present, huge agglomerations of pilgrims, far in excess of those who visit Mecca, can be so dealt with as to prevent the diffusion of cholera amongst them even after the disease has declared itself; and we have no hesitation in saying that results that can be achieved at Hurdwar can be much more easily achieved at Mecca, where cholera is much less frequent, if only a reasonable system of sanitary measures and sanitary administration is carried out there. Precautions which other countries can take at the points of the pilgrimage where the pilgrims are under the control of their respective Governments will remain almost useless so long as Turkey and the Constantinople and Mecca authorities are allowed to use the pilgrimage as a means of making money by way of sanitary taxes and exactions as the point of first importance.

How far Turkey's attitude of reserve may in part be shared by other countries, and notably by our own, remains to be seen. It has often happened that countries having no local or commercial interests have found it very easy and cheap to call upon really interested countries to undertake measures which the latter countries have viewed with disfavour because they have not believed in their utility. We can only trust that where reason is on the side of restrictions these will be submitted to even at some cost, and that no attempts will be made to restrict the liberty of individuals and of commerce which are unreasonable and which will in consequence have to be resisted. In the past the attitude of pressing for unreasonable restrictions has been the main cause of the failure of international sanitary conferences. This attitude was largely avoided at Venice in 1891 and at Dresden in 1893, an example which, we trust, will be followed in the gathering at Paris.

CONVICTION OF AN ADVERTISING QUACK.

ON the 22nd inst., at the Liverpool Assizes, a man named Francis McConville was tried before Mr. Justice Day and convicted of having unlawfully and by means of false and fraudulent pretences obtained from John Gardner several sums of money amounting to £52 12s. The facts as given in evidence were briefly as follow. The prisoner occupied a shop, No. 14, Brunswick-road, and resided at a house which stood back to back with the shop, this house being No. 9, Erskine-street, both thoroughfares running at an acute angle to one another and being situated in a central part of Liverpool. Gardner was a resident in the north of Ireland and was a poor, hard-working man. In August, 1890, a pamphlet published by "Professor Hamilton" fell into his hands, and as a result of perusing it he persuaded himself that he was suffering from some disease. He thereupon wrote to the address given in the pamphlet, and a correspondence was commenced, which lasted from August, 1890, down to February, 1893, the result of which was that the prisoner succeeded in getting from Gardner the sum named. The letters written by the prisoner were headed "Medical Institute," and in them were such expressions as "my professional treatment," "safe, speedy and permanent cure," and "extensive and highly successful practice," which, with the pamphlets, were all calculated to make Gardner believe that the writer was a duly qualified medical practitioner. In the first letter the prisoner asked for a fee of one guinea, and subsequently for fees of 5 and 3 guineas. In spite of lavish promises of speedy and complete cure Gardner got no better and was induced by the prisoner to go to Liverpool. He went to 14, Brunswick-road, and there saw a person whom he believed to be the prisoner, who examined him. He was then told that if he stayed in Liverpool he could be cured for 10 guineas, but if he returned to Ireland the cost of treatment would be 25 guineas. He returned to Ireland and sent the prisoner £14 on account. In December, 1891, the prisoner recommended the use of an electric appliance, calculated, according to the prisoner's letter, "to exercise its benign influence upon the organs of the body and to invigorate and strengthen the organisation." For this belt 12 guineas was paid. In February, 1892, Gardner was again induced to go to Liverpool, and was again examined at 14, Brunswick-road. This cost him more money, and by August, 1892, the total amounted to over £52. In concluding his opening address the learned counsel for the prosecution urged that the jury could not fail to see that the whole transaction had been a system of bleeding and extortion from beginning to end. Inspector Fisher, who arrested the prisoner, stated that he had known him as Thomas Kelly, King, and Co., King and Hamilton, Francis McConville, and Professor Hamilton. Since 1888 he had resided at 14, Brunswick-road, and since 1890 this address had been known as the "Medical Institute," McConville being the occupier. An assistant inspector in the post office proved that the prisoner represented himself as McConville and Hamilton, the latter being the name under which he traded. The man Gardner was called and said that neither the belt nor medicine had done him any good, which elicited some laughter in court. Mr. Benjamin Davies, an expert in electricity, said that the belt sent by the prisoner to Gardner was quite incapable of conveying any electrical effect whatever. Mr. Frank Thomas Paul, Lecturer on Medical Jurisprudence at the Liverpool University College, said the belt had no medical effect whatever; it was not capable of conveying any electricity to the body; it could do no harm or any good except as an article of clothing. The prisoner was ably defended by Mr. Shee, Q.C., and Dr. Commins, several witnesses testifying to his successful treatment. In summing up the learned judge said that "the question for the jury to consider was whether the prisoner held himself out to be a medical man, a medical man qualified to act. If there were such representations and Gardner was induced thereby to part with his money the prisoner was guilty of obtaining money by false pretences. In this case the position of a registered surgeon on the premises was of no importance." His lordship read a letter given in evidence, signed "A. Hamilton," in which Gardner was recommended to procure an electric belt, and in which the prisoner stated that as he knew the state of his health exactly he was able to judge the proper amount of electricity with which it should be charged. The jury found the prisoner guilty, and, at the request of the judge to be informed of what the police knew of the prisoner, Inspector Fisher stated that he was formerly a bill-poster in the employment of the firm of Longest and Co. Longest was prosecuted about 1888 for distributing obscene literature and having it in his possession. He absconded from his bail when committed to the assizes and the prisoner having quarrelled with him set up in a similar position as King and Co. He deluged the city with placards and posters, posting them himself in public conveniences. On public holidays he deluged the city with obscene literature, of which people complained, and for distributing which many people had been prosecuted. The police were very seldom able to get at the prisoner himself. His business was of a large character, he frequently obtaining £30 in one transaction. In one case he received from one individual £57 within two months. The police were always in this difficulty that no one would come forward and state the nature of the business they had with the prisoner. His total income from Brunswick-road was something like £3000 or £4000 a year. During the last three months of 1893 it was over £800; but he hedged himself in so that the police could not get at him. He advertised his business at the rate of £400 a month. The prisoner was the principal of the whole concern. Detective Robertson informed the court that the prisoner before becoming a bill-poster had been convicted of theft. On Dec. 8th, 1888, he was arrested for distributing obscene books, and was repeatedly fined for posting indecent bills. He then succeeded in getting this done for him, the men refusing to state from whom they got the bills. The prisoner's patients consisted of office boys getting 12s. per week, college boys from various colleges, clergymen, commercial travellers, and good business men in Liverpool. The prisoner got 60 guineas on one occasion, and 50 guineas and 11 guineas very often. The mention of clergymen created some sensation in court. Mr. Justice Day, in passing sentence, said he had heard an account of the prisoner's dealings, and it was certainly high time his proceedings were stopped. The prisoner seemed

to prey upon his fellows' fear—upon persons who from false shame did not go to their regular medical attendants, who were always ready to treat their cases. It was a false, silly, unmanly shame. Men were not ashamed of their vices, but they were ashamed of the consequences. Prisoner knew the state of mind which persons who came to him were in to conceal their vices. The prisoner extorted money from them and squeezed them in the shameless manner in which he had squeezed this poor Irishman, whom he had drained of every penny he had got. It was a most cruel business. It was a business that ought to be exterminated. Continuing his remarks, the learned judge expressed his pleasure that the police had succeeded at last in unearthing the prisoner. Inspector Fisher deserved great credit for the way in which he effected the prisoner's arrest; and his lordship also complimented a witness named George who had been in the prisoner's employ and gave important assistance in making out the case against the prisoner. It was very rarely, indeed, that information could be got in such cases as these. Foolish persons were plundered through false shame, and then were almost ashamed to say so. Prisoner, knowing the weakness of human nature, took advantage of it and got these large sums of money. It was fortunate for society that the prisoner had been convicted by the jury. The jury very properly, as clear-headed, sensible men, had convicted the prisoner of these false pretences. He (Mr. Justice Day) regretted that he could not relieve Liverpool for a very much longer time of the prisoner's presence than he was going to do. The most he could give the prisoner—and it was not the most he deserved—was to sentence him to five years' penal servitude. The sentence, therefore, would be that prisoner must go to penal servitude for five years.

THE DEBATE ON THE DRAINAGE OF PARIS.

(FROM OUR SPECIAL CORRESPONDENT.)

AT the reopening of the debate on the Government proposal to sanction the loan of 117,000,000 francs to complete the drainage of Paris there was a better attendance of deputies. It was generally understood that this would be a field day for the opponents of the project, who are for the most part deputies from the departments of the Seine et Oise and the Oise, where most of the sewage farms will be established. It is remarkable what strong opposition the proposal has excited among the inhabitants concerned, and this opposition has been manifested not only to-day in the Chambers, but for years past at all international congresses and other gatherings where the question was discussed. Organisations have been established to agitate against the principle of sewage farms, and many of the Parisian journals have been won over by those who object to the Government proposal. On this occasion the first speaker was M. Gauthier, deputy from Clagny. He did not oppose the first half of the project—i.e., the abolition of cesspools, the direct drainage into the sewers, and the reconstruction and the completion of the system of sewers. He complained of the second half, which consisted of throwing the sewage on the soil, and the ever-increasing demand for land to convert into sewer farms. In 1889 it was 800 hectares in the plains of Achères that were required, and they were led to believe that this would suffice. It was not said that more would be required, for fear of exciting local opposition. He did not represent a district that would be directly affected, and therefore claimed to be impartial. Paris possesses 800 hectares at Achères, 500 hectares at Méry-sur-Oise, and 800 hectares at Gennevilliers—a total of 2100 hectares. The minimum required according to the Government reporter is now set down at 3500 hectares. The project fails to indicate by what means the remaining two-fifths of the land necessary will be obtained. There is no clause for compulsory purchase. If the town fails to buy the required land what will it do with its sewage? There would then remain some 60,000,000 cubic metres of excremental matter which should not be put on the land. The fact is that under such circumstances, instead of putting 40,000 cubic metres annually on each hectare of the existing sewage farms, 80,000 or 100,000 cubic metres per hectare would be thrown on to these farms, and thus they would be converted into foul quagmires. In looking at the map it will be seen that the proposed sewage farms are on the banks of the Seine and the Oise. When accidents occurred, when severe frosts rendered irrigation impossible, would not the raw sewage be cast in the rivers, and thus the Oise, as yet unaffected by Parisian sewage, would become contaminated like the Seine? M. Gauthier went on to calculate that twice, perhaps three times, as much more land would be required than the 3500 hectares mentioned in the Government proposal. If all this land was secured what would be done with it? Would the Parisian municipality grow vegetables on it as at Gennevilliers? In that case there would be an enormous supply of vegetables, a glut on the market, followed by such a fall in prices that the cultivation of vegetables would no longer pay. If, on the other hand, the land was let out to private cultivators, what guarantee would there be that the sewage would be properly filtered through the soil. The sewage continues to flow at night time, the cultivators would not work in the middle of the night, and the raw sewage would then be allowed to escape into the river, or else the sewage water in the little trenches would rise to such a height that it would touch and contaminate the leaves of the vegetables. A sewage market-garden must be watched hour by hour both night and day, and this amount of care can never be expected at the hands of private cultivators. The municipality must do its own work, and thus condemn itself to enter into competition with all the private market gardeners who live round Paris. Even if the farms could be managed without any danger to public health the villa owners will abandon so unsavoury a neighbourhood. The comparison with Berlin does not apply, for there the sewage farm was established in the midst of a desert, whereas near Paris such farms would be in the midst of a beautiful country, richly studded with villas and gardens. The Society of French Agriculturists reports that the sewage of Paris might greatly augment the agricultural wealth of France, but that if put on the land at the rate of 40,000 cubic metres per hectare three-fourths of the fertilising principle would be lost and veritable quagmires created. The sewer, therefore, should be prolonged so as to reach countries where sewage was really needed for agricultural purposes.

M. Mesureur, Deputy for Paris and author of the Government report and proposal, spoke next. He reminded the National Assembly that the Government in 1875 appointed a commission to study how the contamination of the Seine could be prevented, and this commission reported in favour of sewage irrigation works. It was the Government, therefore, and not the town of Paris that first proposed this solution of the difficulty. Long discussions followed and a project of law was first submitted to Parliament in 1885, but only discussed by the Chambers three years later. The debate lasted six days, the proposal was adopted and the result was the law of 1889, which enabled the town to buy the 800 hectares at Achères. On several occasions the Government had urged that the works should be pressed forward, and the late Minister of Public Works, M. Viette, insisted on the fact that the cholera epidemic had followed the course of the Seine from Paris to Havre. The waters were daily contaminated as far as Rouen, a distance of 220 kilometres. The mud deposits caused by the Paris sewage, which reached the weir of Port-Villez in 1878—that is, a distance of 126 kilometres—had now attained Pont-de-l'Arche, a further distance of 63 kilometres, and infectious diseases in the towns on the banks of the Seine had augmented in due ratio with the contamination of the river. He did not believe that the inhabitants of villas were so bitterly opposed to the project. On the contrary, those who had villas on the banks of the Seine were abandoning them on account of the foulness of the river, and they would return when sewage was no longer thrown into it. This would do more good to the interests of villa proprietors than the irrigation works could do harm. In discussing the interests of the departments we must not forget, he said, the interests of Paris, where it was proposed to augment the supply of pure water and to properly drain the houses and the streets; but the town of Paris was not satisfied with merely completing its system of drainage and carrying all its sewage out of the town—it sought the sanction of Parliament so as not to throw this sewage into the river. It only asked for 3500 hectares of land to be its own property, but the main sewer would pass over 7000 hectares of land suitable for irrigation purposes. These 7000 hectares, though remaining in the hands of private proprietors, could be supplied with

the sewage water of Paris, and thus the pressure on the sewage farms of town would be relieved. The 40,000 cubic metres of sewage per hectare would be reduced in proportion to the amount of sewage utilised by private cultivators. M. Gauthier had urged that the raw sewage would be thrown into the Seine. That would be a negation of the projected law. If sewage is to be thrown into the river why incur the expense of conveying it to such a distance from Paris when the river flowed through the city? The project before the Chambers was as sincere as it was scientific, and they would not allow its beneficent results to be stultified by surreptitiously discharging raw sewage into the Seine.

M. Berteaux, the representative of Argenteuil, Poissy, Meulan, and other districts, now ascended the tribune. He disclaimed all idea of systematic opposition. His constituents were above all interested in the purification of the Seine, but he complained that there was no plan before the Chambers. There was but a vague phrase stating that lands were to be purchased for the purification of sewage by its utilisation for agricultural purposes. What sort of irrigation would be attempted? Was it intensive irrigation under the control of an army of municipal servants, commanded by a brilliant staff of officers? What would be the annual cost of such a service? If cultivation was to be attempted 40,000 cubic metres of sewage per hectare was too much; if the soil was to be used merely to filter the sewage this would be in opposition to the law of April 4th, 1889, which insists on cultivation. The land at Achères had been bought from the State on easy terms; the remaining land required would not be obtained so easily. If Achères is not to become a pestilential quagmire, the law must stipulate what sort of cultivation is to be carried out. The best was market gardening, but the town would surely sell its vegetables so cheaply that the Parisian market gardeners would be ruined. It was an error to describe Gennevilliers as belonging to the town. It belonged to private market gardeners, and 40,000 cubic metres of sewage per hectare were annually served out to these market gardeners. This amount was measured by metres on its arrival; but there was no proof whatsoever that it was all utilised. The market gardeners were there to grow vegetables and not to purify sewage; and when they had more sewage than they wanted they let it flow into the river in its raw condition. The French Agricultural Society had concluded that not more than 12,000 cubic metres could be annually utilised per hectare, and he did not believe that more was utilised at Gennevilliers; he protested that more should not be employed anywhere, as otherwise the ground would be converted into an unwholesome morass. The sewage of Paris must be taken further away, to Beauce, to Champagne, where it was really required for agricultural purposes. Instead of intensive irrigation let there be facultative irrigation—this would satisfy the interests of all parties. The experiment at Gennevilliers had been described as conclusive. Certainly monstrous vegetables were grown there; but, though big, they were unwholesome. This he had the right to say, for in 1892 the specification of the Assistance Publique for the purchase of vegetables to be supplied to the patients in the Paris hospitals stipulated that none should be obtained from Gennevilliers. An epidemic of typhoid fever then prevailed in the Paris hospitals and it was attributed to vegetables coming from Gennevilliers. (M. Georges Berry interrupted to say that he also had seen this order, and M. Marcel-Hubert shouted that the housewives of Paris would not buy the Gennevilliers vegetables.) Nor did he think the value of the land had greatly increased, for now the town of Paris, instead of treating with the proprietors, wanted compulsory powers, and he read a letter, dated Dec. 21st, 1893, written by the mayor of Gennevilliers. The mayor said: "We have been able to note that the sewage embarrassed the proprietors, especially those who sought to build, because the wells, the cellars, and sometimes even the gardens were often flooded by the sewage water." The mayor also urged that, if all the Paris houses were to drain into the sewers, the evil would be greatly augmented. Seven hundred inhabitants had signed petitions against the project; but, unfortunately, the authorities at Paris concealed all these protests, and made the world believe that the people at Gennevilliers were quite contented. The Prefect of the Seine, usually so courteous and affable, had refused to receive the mayor of Gennevilliers to discuss the question with him. M. Berteaux went on to argue that at Gennevilliers there was no objection to facultative irrigation, but that the population could not endure compulsory and intensive irrigation. A meeting of 165 mayors, town clerks, &c., had been held at Conflans, representing the menaced districts. There it was stated that in several places facultative irrigation would be welcome. The true solution was here indicated. A friendly agreement should be arrived at to supply where wanted the sewage necessary. If, however, the town of Paris persisted with its intensive irrigation—that is, forcing 40,000 cubic metres on each hectare—the mayors of the districts would avail themselves of the law that made them the guardians of the public health, and, by appealing to the Council of State, would obtain the abolition of such dangerous sewage farms. These farms would become more than usually dangerous when flooded with rain. What calculations had been made for the bad weather, for the frost, for the seasons when sewage was not wanted for agricultural purposes? The project of law very carefully stipulated that every Parisian householder must connect his house with the sewer within three years; but there was nothing said as to when the works for the disposal of this sewage were to be completed. As the connexion of the houses with the sewers would bring in a revenue of 8,000,000 francs to the town they might be sure that this would be pressed forward actively; but there was no guarantee that the land for the sewage farms would be purchased with equal promptitude. Nor was there any assurance given that the proposed augmentation of the Paris water-supply would be completed within the three years. Thus the houses of Paris would be made to drain into the sewers before there was enough water to make the system work satisfactorily and before the land for the purification of the sewage had been obtained. M. Berteaux urged that another and more detailed scheme should be presented and that in the long run it would cost less to build a sewage canal towards the sea. Agriculturists would be able to purchase the sewage they might desire to taken from this canal.

This speech brought the second day's debate to a close and the subject was again adjourned.

THE DIAGNOSIS OF SMALL-POX.

AT the Liverpool Assizes an action was tried before Mr. Justice Charles and a jury, between Miss Mary Gray, dressmaker, and Mr. Alexander William Mackenzie, L.R.C.P. and L.R.C.S. Edin., both of Waterloo, near Liverpool. The plaintiff claimed damages from the defendant for negligence and want of care in attending her as a medical adviser. The defendant denied the allegations, and counter-claimed 10 guineas for medical attendance. Miss Gray carried on business at Waterloo as a dressmaker, and at the time of the occurrence which led to this action was so successful that she calculated on making £400 a year. She employed twelve assistants, and residing in the house with her were an assistant named Ellis, and a domestic servant named Margaret Evans. About March 8th, 1893, the latter contracted what subsequently proved to be small-pox. She was not aware of it at the time, but subsequently remembered that it was about then that she travelled in a train between Waterloo and Liverpool, and that in the same compartment there was a man who, as far as she could judge, was suffering from the disease. She described him as having lumps on his face, but no explanation was given as to how such an extraordinary and improper proceeding could have happened on such a busy and crowded line as this. The evidence was conflicting, as was to be expected, between that of the plaintiff, her servant, and assistants on the one hand, and the defendant on the other, but the following facts transpired. On March 22nd the servant Evans was taken ill with pains in the back and head, and went to bed. On the 24th Miss Gray sent for the defendant, who attended, and, according to his evidence, she complained of pains all over her body and of headache. Her eyes and nose were running. She said she had been ill for a day or two, but said nothing about her back. He ordered antipyrine powders and a pill. Next day he found that she felt much better, and the pains had almost entirely disappeared. He told her to rest on the Sunday (the 26th), and he would call on the Monday. Judging by her condition there was no reason why he should call on the Sunday. Now occurred a conflict of evidence. According to the plaintiff, the defendant said on the Saturday to her, "Margaret has a slight eruption on her hands and face; it is the powders I gave her." According

to the defendant there was not a mark upon her on this day. On the Sunday the servant, according to her account, was ill in bed, and the rash on her arms and face had developed into pimples the size of pearl barley; but neither she nor the plaintiff sent for the defendant or gave him any intimation that his patient was worse. Next day (the 27th) he saw her, and here, again, there was a conflict of evidence. According to the plaintiff the servant had small pimples with yellow heads all over her face. The girl crawled downstairs and saw Mr. Mackenzie in the dining-room. His evidence was that she had large irregular red-colonred spots about the size of a sixpence upon her arms and neck, but no spots on her forehead. Seeing the blotches, he asked her what she had been doing, and she said she had not been out for some months except for a few minutes delivering a parcel. He had thus no reason to suppose that she had been exposed to any disease of an infectious nature. That day she answered the door, and appeared to have been doing her work. He was not sent for again until April 12th to see Miss Gray, and he found that she was ill, and that the girl Evans had decided indications of small-pox. Miss Gray and four of the assistants also contracted the disease. Medical witnesses were called on both sides, those for the plaintiff urging that the defendant ought to have recognised the case of Evans as one of small-pox on March 27th, while those for the defendant contended that the case was not recognisable as small-pox until the defendant saw her in April. In summing up the case to the jury Mr. Justice Charles said that however much they might sympathise with the plaintiff in the loss she had sustained, they must not remunerate her out of the defendant's pocket unless they were satisfied that he had been guilty of negligence and that the illness of the plaintiff was the result of his negligence. They must be satisfied that the servant communicated the disease, and not one or other of the assistants coming from Bootle and Seaforth (where small-pox prevailed at that time). The great question was, when did the disease become obvious in the case of the servant, and whether it could have been seen by a medical attendant on March 27th. The issue was an important one. Though the plaintiff had suffered pecuniary loss, there was more at stake for the defendant; there was his professional standing, for it was a serious thing if it could be said against any certified medical man that he failed to see that a woman was suffering from small-pox when a novice might have detected the fact. The jury, after an absence of three-quarters of an hour, returned a verdict for the defendant. The case is, as will be seen, a most instructive one, showing how important it is that every general practitioner should be able *inter alia* to diagnose promptly any of the exanthemata. Anyone who has seen much of small-pox in its different forms will know how very difficult the diagnosis is at first, hence the importance of every student having ample practical experience of all infectious diseases. The case also conveys a useful lesson to the public as to the value of vaccination positively and of revaccination negatively. These patients had been vaccinated and had the disease mildly. Had they all been revaccinated the strong probability is that they would have escaped altogether. A century ago advertisements in the newspapers for servants used to contain a proviso that any applicant must have had the small-pox. It is becoming a very grave question whether the time has not arrived for an equal insistence on revaccination, more particularly in cases where a number of persons capable of conveying small-pox are employed. Miss Gray complained that all her materials had to be destroyed and that people who met her in the street a month after perfect convalescence would walk on the other side. Such is the unreasoning terror which the general public has of this loathsome disease. And yet they will not adopt the simple safeguard of revaccination.

CHOLERA.

ACCORDING to official intelligence there has been a recrudescence of cholera at Constantinople. Several cases have recently made their appearance. Five fresh cases and one death occurred on the 24th inst. From what we know of the way in which epidemic cholera comports itself in relation to season, it might be expected that there would be spring manifestations of the disease. So far, however, we have no official intelligence of the reappearance of cholera in Russia, Germany, or the continent of Europe, although it is quite possible that sporadic cases or limited outbreaks may manifest themselves as the warm season approaches, as there are indications that the epidemic is not yet dead, but only dormant and hybernating at the present time.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Liverpool Port Sanitary District.—The Council of the City of Liverpool was last year, after public inquiry by Mr. Barry and Mr. Jenner Fust of the Local Government Board, permanently constituted the Port Sanitary Authority for the Port of Liverpool, which means, practically, the River Mersey from its mouth to Ince Ferry. After June all vessels coming from infected ports were medically inspected on arrival by Drs. Moore and Roberts of the port sanitary staff, who took charge of alternate tides. There were altogether, up to Oct. 25th, 210 vessels thus inspected. On one of these vessels two men were found suffering from symptoms of cholera, and on another one of the seamen developed similar symptoms in dock after the vessel had been medically examined; he was, however, at once removed to the Park Hill Hospital. There were 5971 vessels inspected by the port sanitary inspectors during the year, and no trouble seems to have been found in obtaining structural modifications where such were deemed necessary. Some interesting figures are given by Dr. E. W. Hope with regard to the medical inspection of emigrants, which is carried out by the medical officers of the Board of Trade, and also at certain seasons by medical officers acting for the American Government. Any persons suffering from illness, or coming from infected localities, are liable to be rejected by the examining officers, and one of the port sanitary inspectors attends the medical examination of emigrants, and takes charge of any who may be rejected. There was during 1893, owing chiefly to the presence of cholera on the Continent, and the restrictions it necessitated, a large reduction in the number of emigrants passing through Liverpool, the figures being 167,468, as against 200,786 in the previous year.

Crewe Urban Sanitary District.—The zymotic death-rate of this district during 1893 was a high one, amounting, as it did, to 5·3 per 1000, compared with 2·3 in 1892. The infantile mortality was also high, being 171 per 1000 births. Mr. Herbert Jones, in his report, refers to the importance of increasing the number of ventilating shafts in the street sewers, in order, as far as practicable, to prevent the ventilators at the street level from acting as outlets instead of inlets. There are in Crewe a large number of tip-pan closets, or "tipplers," in which use is made of the slop-water to flush the drains, and one of the drawbacks to them seems to be that they offer too great a temptation to the occupiers of houses to throw down large substances that often block the drain; the practice has, indeed, become so common that the London and North-Western Railway Company, on whose property these "tipplers" are common, have determined to fine all tenants whose drains become blocked. The small-pox hospital has, Mr. Jones tells his sanitary authority, proved of very great value, and he strongly urges the erection of a hospital for other infectious diseases. Efforts are made to deal with measles in this district, and on a case of the disease coming to the knowledge of the medical officer of health, he addresses a circular letter to the head teachers of both the day and Sunday schools attended by the patient, and also of all schools attended by any members of the affected family, advising that the children shall be excluded until a certain date. As regards phthisis, Mr. Jones sends a circular of precautions to all cases coming to his knowledge; and he advises that if the Notification Act be adopted, phthisis should be included in the list of notifiable diseases.

Sutton Coldfield Urban Sanitary District.—The general death-rate of this district for 1893 was 15·7 as against 13·4 in 1892, the excess being in a large part accounted for by outbreaks of measles and influenza. The zymotic death-rate varied enormously in the several wards, being 3·98 in Hill

ward and *nil* in Walmley and Wylde Green. In Sutton Coldfield measles is a notifiable disease, and Dr. Bostock Hill records some interesting facts concerning an outbreak of it which commenced in the last quarter of 1892. During the first and second quarters of 1893 368 cases with 9 deaths were notified; 3 out of the 9 deaths were of children under five years of age, and 6 of them were under two years of age, an illustration, as Dr. Hill points out, of the advantages of shielding young children as long as possible from infection. Whenever a case of the disease was notified the infected house was visited and a handbill setting forth the needful precautions left. In the early part of the outbreak an attempt was made to disinfect all the infected dwellings, but with the existing staff it was found quite impracticable. Concerning the value of notification Dr. Hill states that, though apparently it had not much influence upon the spread of the disease, he thinks much good was effected by the control of the patient which resulted from the inspector's visit; that exposure, &c. was prevented and the fatality rate reduced. It is certainly difficult to see how the precautions taken could fail to have had a good effect. With regard to school closure, Dr. Hill thinks it was not so beneficial in the recent epidemic as on former occasions when its results appear to have been most satisfactory.

Withington Urban Sanitary District.—In discussing infantile mortality in this district Dr. Railton mentions that at the hospital with which he is connected, "although many infants of Jewish parentage are brought for treatment, it is the exception to find one that is emaciated, while the babies of the corresponding class of Christians are frequently, if not usually, in that condition." The difference Dr. Railton regards as due to the fact that the Jews almost invariably suckle their offspring, while among the Christians of the same class the practice is far from common.

Epping Rural Sanitary District.—Mr. Trevor Fowler, in giving a summary of the systematic inspection of his district made by him in each month during the year, points out to his sanitary authority that inspections of this nature are incumbent upon him by Article 18, Section 3, of the Local Government Board's Order, 1891. He mentions this as apparently some members of his sanitary authority regard these inspections as solely the duty of the inspector of nuisances. Obviously they are wrong in thus regarding them, as it would be impossible for the medical officer of health to be familiar with the sanitary condition of his district without them. Out of 290 notifications of infectious diseases received during the year, only 9 were notified according to the provisions of the Act—i.e., by the head of the households as well as by the medical attendant. There were 61 cases of erysipelas notified in 1893, as against 10 and 30 for 1891 and 1892 respectively. All the cases are stated to have been distributed widely over the district. The disease prevailed especially in the Harlow district, where the water-supply is extremely deficient and impure, and Mr. Fowler thinks there may have been some connexion between the two.

Llanelly Rural Sanitary District.—Dr. E. Evans, in commenting upon the absolute disregard of many poor persons for infection and for the necessity of exercising any precaution in dealing with infectious diseases in their houses, states that "it would appear to be very desirable that instruction in the laws of health, should form part of the curriculum in all the elementary schools in the country." With this expression of opinion we entirely agree, as without such education and instruction the efforts of sanitary officials must always be, to a large extent, in vain. Fifteen cases of puerperal fever were notified during the year in this district, and four of them were probably due to infection carried by one midwife.

Uxbridge Rural Sanitary District.—The notifications of infectious disease in this district for 1893 were 285, compared with 95 and 77 in the two preceding years. Out of this number 113 were scarlet fever, and Mr. Charles Roberts expresses the opinion that "in these days of compulsory education, when the school attendance officer is active," we may expect this disease to be always with us. Certainly, unless a system of daily medical inspection of school children can be instituted it is difficult to gainsay Mr. Roberts' contention. In the parishes of Billington and Cowley there were 15 cases of typhoid fever, and all, with one exception, occurred in a certain road. They were caused, it is believed, by the drinking water obtained from an open spring, from which the cottagers obtained water by dipping

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6076 births and 3979 deaths were registered during the week ending March 24th. The annual rate of mortality in these towns, which had declined from 20·5 to 19·2 per 1000 in the preceding three weeks, rose again last week to 19·8. In London the rate was 20·3 per 1000, while it averaged 19·5 in the thirty-two provincial towns. The lowest rates in these towns were 10·6 in Derby, 13·1 in Portsmouth, 14·2 in Swansea, 14·6 in Halifax, and 14·9 in Croydon; the highest rates were 22·5 in Bolton, 23·0 in Liverpool, 23·8 in Manchester and in Sunderland, and 25·1 in Salford. The 3979 deaths included 480 which were referred to the principal zymotic diseases, against numbers declining from 478 to 448 in the preceding three weeks; of these, 162 resulted from measles, 123 from whooping-cough, 84 from diphtheria, 39 from scarlet fever, 38 from "fever" (principally enteric), 25 from diarrhœa, and 9 from small-pox. No fatal case of any of these diseases occurred last week in Brighton or Norwich; in the other towns they caused the lowest death-rates in Croydon, Derby, and Halifax, and the highest rates in Bristol, Burnley, West Ham, Salford, and Birkenhead. The greatest mortality from measles occurred in London, Birmingham, Leicester, Birkenhead, and Salford; from scarlet fever in Wolverhampton and Burnley; from whooping-cough in West Ham, Birkenhead, Hull, and Newcastle-upon-Tyne; and from "fever" in Gateshead. The 84 deaths from diphtheria included 56 in London, 8 in Manchester, 3 in Bristol, and 3 in Salford. Five fatal cases of small-pox were registered in Birmingham, 3 in Oldham, and 1 in London; but not one in any other of the thirty-three large towns; 85 cases of this disease were under treatment in the Metropolitan Asylum Hospitals and in the Highgate Small-pox Hospital on Saturday last, the 24th ult., against 84, 87, and 87 at the end of the preceding three weeks; and 17 new cases were admitted during the week, against 24 and 20 in the preceding two weeks. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 2103, against 2188, 2153, and 2107 on the preceding three Saturdays; 233 new cases were admitted during the week, against 212 and 222 in the preceding two weeks. The deaths referred to diseases of the respiratory organs in London, which had been 434 and 373 in the preceding two weeks, rose again to 397 last week, but were 87 below the average. The causes of 68, or 1·7 per cent., of the deaths in the thirty-three towns were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Oldham, Blackburn, Newcastle-upon-Tyne, and in seven other smaller towns; the largest proportions of uncertified deaths were registered in Nottingham, Liverpool, Bolton, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 21·1 and 21·0 per 1000 in the preceding two weeks, further declined to 18·7 during the week ending March 24th, and was 1·1 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 13·3 in Greenock and 16·6 in Leith to 20·5 in Perth and 22·2 in Paisley. The 533 deaths in these towns included 32 which were referred to whooping-cough, 8 to diphtheria, 6 to scarlet fever, 5 to diarrhœa, 4 to measles, 3 to "fever," and not one to small-pox; in all, 58 deaths resulted from these principal zymotic diseases, against 78 and 65 in the preceding two weeks. These 58 deaths were equal to an annual rate of 2·0 per 1000, which was 0·4 below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough, which had been 41 and 30 in the preceding two weeks, rose again to 32 last week, of which 15 occurred in Glasgow, 5 in Dundee, and 5 in Aberdeen. The deaths referred to diphtheria, which had declined from 12 to 8 in the preceding four weeks, were again 8 last week, of which 2 occurred in Glasgow, 2 in Edinburgh, and 2 in Leith. The fatal cases of scarlet fever, which had been 8 in each of the preceding two weeks, declined to 6 last week, and included 3 in Glasgow and 2 in Edinburgh. Of the 4 deaths from measles, 2 occurred in

Glasgow and 2 in Dundee; and the 3 fatal cases of "fever" were recorded in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 113 and 106 in the preceding two weeks, rose again to 111 last week, but were 40 below the number in the corresponding week of last year. The causes of 43, or more than 8 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 30·4 and 25·8 per 1000 in the preceding two weeks, rose again to 29·4 during the week ending March 24th. During the past twelve weeks of the current quarter the death-rate in the city has averaged 31·5 per 1000, against 21·2 in London and 18·7 in Edinburgh. The 197 deaths registered in Dublin during the week under notice showed an increase of 24 upon the number in the previous week, and included 16 which were referred to the principal zymotic diseases, against numbers declining from 14 to 9 in the preceding three weeks; of these 16 deaths, 5 resulted from scarlet fever, 3 from measles, 3 from whooping-cough, 3 from diarrhœa, 1 from diphtheria, 1 from "fever," and not one from small-pox These 16 deaths were equal to an annual rate of 2·4 per 1000, the zymotic death-rate during the same period being 2·8 in London and 1·5 in Edinburgh. The five deaths referred to scarlet fever exceeded the number recorded in any week since the middle of 1888. The fatal cases of whooping-cough, which had declined from 7 to 5 in the preceding three weeks, further fell to 3 last week. The 3 fatal cases of measles exceeded the number in any recent week, while the mortality from "fever" showed a further decline from that recorded in recent weeks. The 197 deaths in Dublin last week included 25 of infants under one year of age and 51 of persons aged upwards of sixty years; the deaths of infants showed a decline, while those of elderly persons slightly exceeded the number in the preceding week. Two inquest cases and 4 deaths from violence were registered; and 55, or more than a fourth, of the deaths occurred in public institutions. The causes of 17, or nearly 9 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

MOVEMENTS OF THE MEDICAL STAFF.

SURGEON-MAJOR-GENERAL DAVIS has assumed Medical Charge at Portsmouth. Surgeon-Captain Nealon has been transferred to Enniskillen. Brigade-Surgeon-Lieutenant-Colonel Pollock and Surgeon-Captain Morphew have embarked for India in the *Warren Hastings*. Surgeon-Captain Woods has left Alderney for Malta on trooping duty. Surgeon-Lieutenant Barter has been transferred from the Curragh to Dublin, and Surgeon-Captain Nicolls to Belfast. Surgeon-Major-General Inkson has arrived in Malta, and Surgeon-Captains Moffett and Duncan at Cyprus. Surgeon-Captain A. Y. Reily, having reported his arrival on March 20th at Netley, is posted to the Medical Division of the Royal Victoria Hospital. Surgeon-Captain G. Bent, having joined at Netley, is posted to No. 5 Company Medical Staff Corps.

ARMY MEDICAL STAFF.

The undermentioned Surgeon-Majors are entitled to promotion to the rank of Surgeon-Lieutenant-Colonel, having completed twenty years' service: L. B. Ward, W. B. Miller, M.D., J. Martin, J. J. Greene, M.B., N. McCreery, and J. A. Gormley, M.D.

INDIA AND THE INDIAN MEDICAL SERVICE.

Surgeon-Major Brodie is appointed to the Medical Charge of the Station Hospital, Poona. Surgeon-Lieutenant-Colonel T. C. H. Spencer, I.M.S., is appointed to the Medical Charge of the 21st Regiment Madras Infantry (Pioneers). Surgeon-Major J. Lewtas officiates as Statistical Officer to the Government of India in the Sanitary and Medical Departments during the absence on furlough for one year of Surgeon-Lieutenant-Colonel Wilkie. The services of Surgeon-Captain J. G. Hojel are replaced at the disposal of Government in the Military Department. Surgeon-Major Adams, A.M.S., has leave for four months to England. Surgeon-Major J. P. Greany, M.D., I.M.S., Civil Surgeon, Belgaum, has been granted leave for twelve months. Surgeon-Major J. W. H. Flanagan, M.S., Aden, has proceeded on six months' leave to Srinagar. Surgeon-Colonel Lethbridge, head of the Thagi Department, will proceed home on furlough in April.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major G. H. Turnbull, M.D., to be Surgeon-Lieutenant-Colonel.

VOLUNTEER CORPS.

Artillery: 2nd Hampshire (Southern Division, Royal Artillery): Surgeon-Captain G. G. Sparrow to be Surgeon-Major.—*Rifle:* 3rd Glamorgan: Richard Nelson Jones, Gent., to be Surgeon-Lieutenant.—7th Middlesex (London Scottish): Surgeon-Lieutenant G. G. Ferguson, M.B., from the 1st Tower Hamlets Rifle Volunteer Brigade, to be Surgeon-Captain.—18th Middlesex: Surgeon-Lieutenant H. Baldwin to be Surgeon-Captain.

THE VOLUNTEERS AT NETLEY.

The London Companies of the Volunteer Medical Staff Corps, three of which, Nos. 1, 2, and 3, are composed of medical students, arrived at the Royal Victoria Hospital, Netley, on Thursday evening, March 22nd, for field and ward training during the Easter Holidays. An advance party arrived late on the preceding evening in order to prepare for the advent of the corps, in which work they had the active assistance and coöperation of the regulars at the hospital. The strength consisted of about 160 men, with a fife and drum band, under the command of Surgeon-Lieutenant-Colonel Norton, the senior surgeon at St. Mary's Hospital. On arrival the men at once proceeded to their quarters in the hospital, the officers being accommodated at the mess of the Army Medical Staff. The men were divided into two companies, under the command of Surgeon-Captains Raw and Matthew respectively. During the four days from Friday to Monday various exercises were performed by the corps, the drills including marching, practice in embarking and transporting the wounded in boats, company drill, stretcher drill and bandaging, and field exercise. The inspection by Surgeon-Major-General Broke-Smith, Principal Medical Officer, Netley, was held on Sunday. The men, who were in fine form, did excellent work, which must prove of considerable benefit to them. On Saturday afternoon there was a cessation of work to allow the members so inclined to visit the Isle of Wight. A football match also took place in the hospital grounds, in which several of the men took part. Splendid weather prevailed during their whole stay.

THE BRITISH ARMY OF 1893.

The force of enrolled men available for service in this country in case of need is stated to be as follows. There are nearly 220,000 of all ranks in the regular army, which can be supplemented on emergency by 80,000 army reserve and 30,000 militia reserve, making a total of 330,000 men available for service abroad. For service at home there are, deducting the militia reserve of upwards of 90,000 militiamen, 10,000 yeomanry, and nearly 228,000 volunteers. The grand total available for service at home and abroad is about 662,000 men. So long as a military force remains a defensive one in this country we believe that its requirements could be undoubtedly provided for in the way of hospital accommodation and medical aid, but whether a medical service would be forthcoming adequate to meet all the requirements of any large military expedition proceeding abroad is another matter about which we have no certain information.

DEATHS IN THE SERVICE.

Staff-Surgeon John James Douglas Burns, retired, R.N., M.D., M.R.C.P., J.P., and medical officer of H.M.'s prison at Borstal, died at Borstal Villas, Rochester, on the 10th inst., aged seventy-eight.

Surgeon-Major-General Bradshaw, C.B., Principal Medical Officer H.M. Forces in India, who has been making a tour of inspection of the barracks and hospitals in the command, is expected to finish that duty early next month, when he will return to the seat of government at Simla.

The Queen has appointed Surgeon-General Alexander Smith, M.D., C.B., to be an Honorary Physician to Her Majesty, vice Inspector-General of Hospitals R. Lawson, deceased.

Fifty-three invalids left China on the 10th ult. in the *Himalaya* for Netley.

Correspondence.

"Audi alteram partem."

"DEATH UNDER NITROUS OXIDE GAS."

To the Editors of THE LANCET.

SIRS,—I have read with much interest Mr. John Adams' clear statement of the circumstances relating to the fatal administration of nitrous oxide gas for tooth extraction, and I beg your permission to make some suggestions with regard to the pathological phenomena. It is evident that, as Mr. Adams states, the patient died from what is commonly called asphyxia, but more correctly apnœa—suspended breathing, deprivation of air. Nitrous oxide gas replaced oxygen in the blood and the tissues,[1] and if at the time of the suspended breathing, with cyanosis and rigidity of the muscles, the patient's heart could have been inspected, its right cavities would have been found greatly distended, while the left were nearly empty and the lungs pale from capillary anæmia. The small quantity of blood in the right ventricle and the engorgement of the lungs twenty-five hours after death were results of a post-mortem movement of the blood. The condition of the heart and lungs in the final stage of apnœa is the result of contraction of the pulmonary arterioles excited by blood which has been entirely deoxygenised. The impediment to the onward passage of the blood thus arising explains, on the one hand, the retrograde systemic venous engorgement with cyanosis, venous and capillary congestion of the bronchial mucous membrane, and the resulting secretion of mucus; on the other hand, the systemic arterial emptiness, with consequent cerebral anæmia, epileptiform tonic muscular spasm, and involuntary micturition are thereby explained. In animals killed by nitrous oxide gas inhalation convulsions of an epileptiform character occur as constantly as when death is caused by the mechanical exclusion of air. In the human subject the so-called "jactitations" and the muscular rigidity which frequently occur when deep anæsthesia is caused by nitrous oxide gas are obviously epileptiform, a result of the small quantity of blood which reaches the brain, and that small amount being deprived of the vital oxygen. Sudden and extreme anæmia of the brain, whether the result of a copious hæmorrhage,[2] of ligaturing the arteries which supply the brain, or of arrest of the pulmonary circulation by embolism, by a forcible entrance of air into the veins, or by apnœa in its final stage, is invariably associated with convulsions. Mr. Adams appears to have promptly resorted to the methods usually adopted to restore respiration in such cases. Nitrite of amyl was applied to the nose and mouth, but as no inspirations took place the vapour did not enter the lungs and therefore, as he says, could have had no effect. It might be well in similar circumstances to inject a few drops of the liquid under the skin. Its action in such cases is that of relaxing the vaso-constrictors and so removing or lessening the impediment to the pulmonary circulation. The influence of this agent was well shown in an experiment which I have described in the paper before referred to.[3] Into the trachea of a dog, prepared with the chest and pericardium opened and kept alive by artificial respiration, a glass T-tube was introduced, through which nitrous oxide gas was passed into the lungs, while the expired gases escaped into the air. As in similar experiments, first the left side of the heart and then the right became distended, and in one minute the heart's action had nearly ceased, with over-distension of the right cavities, while the left had collapsed. Then, without loss of time, inhalation of nitrous oxide gas mixed with the vapour of nitrite of amyl was substituted for the pure N_2O by means of a two-way stopcock, and the result was that almost immediately the distension of the right cavities began to subside, and in two minutes they had nearly regained their normal size.

There is yet another remedy which might with advantage be resorted to in similar circumstances, and that is *venesection*. Dr. John Reid, in an interesting paper "On the Effects of Venesection in renewing and increasing the Heart's Action under certain Circumstances,"[4] has shown by experiments on dogs and rabbits that when, as a result of apnœa, the contractions of the heart have nearly or quite ceased in consequence of a paralysing over-distension of the right cavities, they may be increased or renewed by opening the external jugular vein and thus, by a reflux of blood from the heart, enabling the distended right cavities to become disgorged. This evacuation of the distended right cavities may occur even after death, from an accidental wound of one or more large veins in opening the chest. Thus Dr. Sutton, with reference to the distension of the right cavities of the heart which is always found after death in the collapse stage of cholera, says: "When the large veins of the neck were accidentally wounded, as in the act of raising the sternum, the blood escaped from the veins and the right ventricle was emptied in two or three minutes."[5] To ascertain the relative amount of blood on the two sides of the heart after death from apnœa or in the collapse stage of cholera, it is essential that the inspection be not delayed until, as Harvey says, "the blood has made its escape through various channels,"[6] and care must be taken to avoid wounding large veins, and thus allowing the blood to escape from the distended right cavities.

I am, Sirs, yours truly,

Savile-row, March 26th, 1894. GEORGE JOHNSON.

[1] See my paper on the Physiology of Asphyxia and the Anæsthetic Action of Pure Nitrogen. THE LANCET, April 4th and 11th, 1891.

[2] See Kussmaul and Tenner on Epileptic Convulsions from Hæmorrhage, &c., New Sydenham Society, 1859, and On the Pathology and Treatment of Epilepsy, in my Medical Lectures and Essays, p. 236.

[3] THE LANCET, April 4th, 1891.

[4] Physiological, Anatomical, and Pathological Researches, No. 111. See also chapter v., on the Action of Bloodletting &c., in my Medical Lectures and Essays, p. 56.

[5] London Hospital Reports, vol. iv., p. 493.

[6] Second Disquisition on the Circulation of the Blood: Sydenham Society's Translations, p. 127.

"HEART INFLAMMATION IN CHILDREN."

To the Editors of THE LANCET.

SIRS,—My friend and colleague Dr. Sturges has done good service by drawing attention, in his interesting Lumleian Lectures recently reported in your columns,[1] to the severity and danger of pericarditis in childhood and early life, a fact which is as yet very inadequately realised by the profession. Dr. Sturges prefers to speak of it as an "acute carditis," and this name would often be very appropriate; but without discussing the question how far the myocardium and the endocardium are implicated in such cases there can be no doubt that the signal of danger is usually the appearance of a pericardial rub, along with rapid increase of the præcordial dulness, indicating acute dilatation of one or both sides of the heart. That this is a condition of extreme peril is proved by the fact that of sixteen cases which Dr. Sturges can remember no fewer than twelve were fatal; and it may be added that children who survive this immediate danger have almost always permanently dilated and crippled hearts. Clearly, therefore, the proper treatment of these cases is of the most urgent importance. In his comments on my advocacy of the employment of the icebag in this condition Dr. Sturges says: "If by the application of ice to the heart in cases like these the children habitually recover Dr. Lees' contention is made out, but only so." But is not this asking a little too much? Is it fair to demand of any form of treatment proof of its ability to bring about "*habitual*" recovery in cases which Dr. Sturges has found to be so very fatal? In some instances doubtless the tendency to death is too strong to be overcome by any therapeutic method, as in a case recently under my own care, an anæmic child aged three years, ill only one week with its first attack of rheumatism, who died from pericarditis within two days after admission into hospital. Yet I claim that there is evidence that careful treatment of such cases by the icebag and salicylates (with or without leeches) is successful in saving many lives and also in diminishing the damage done to the hearts that recover. Of the last twelve cases of pericarditis under my care at the Hospital for Sick Children only five died. One of these died from broncho-pneumonia, with caseous bronchial glands, and her only evidence of pericarditis was congestion and some adhesion over the posterior surface of the left auricle, which would certainly not have killed her. This reduces the number of deaths from pericarditis to four. Two of these were due, I believe, to the too early discontinuance of salicylates. Both had improved remarkably under ice and salicylates, so much so that the treatment was discontinued. In both instances fresh rheumatic symptoms appeared a few days later and proved fatal. I think that these two cases might have been saved, thus

[1] THE LANCET, March 10th, 17th, and 24th, 1894.

reducing the mortality rate to one in six; but, however this may be, I feel sure that any of your readers who give a careful trial to the treatment by salicylates and ice, with the precautions to prevent undue chilling which are especially necessary in young children (the application of hot bottles to the lower extremities, and an hourly or half-hourly determination of the temperature), will be well satisfied with the result, even if they are not quite able to say that their patients "habitually" recover.

May I also take this opportunity of pointing out that the title of my paper, referred to by Dr. Sturges in the first Lumleian Lecture, was not, "Is there a Dextro-cardiac Respiratory *Centre?*" but, "Is there a Dextro-cardiac Respiratory *Reflex?*" I have no wish to add to the number of hypothetical "centres"; but it does appear to me that there is good ground for believing that a normal reflex exists from the right ventricle of the heart to the respiratory centre, similar to that which is well known to exist from the left ventricle to the vaso-motor centre along the depressor nerves, and with a similar function, the automatic relief of an over-distended ventricle. This suggestion has been approved by some of our leading authorities on cardiac disease as probably the secret of the various forms of cardiac dyspnœa, and I hope that before long confirmatory evidence may be forthcoming from the physiologists, who alone can furnish the decisive proof. I am, Sirs, yours truly,

March 26th, 1894. DAVID B. LEES.

To the Editors of THE LANCET.

SIRS,—The occurrence of a presystolic bruit without mitral stenosis referred to by Dr. Sturges in his lectures upon "Heart Inflammation in Children" is of great interest. As a student one was taught to rely upon a presystolic rumble as an infallible sign of mitral stenosis, and Dr. Sansom states in his recent work upon diseases of the heart that the only sound that may lead to a mistaken diagnosis is a diastolic bruit due to aortic regurgitation that is heard at the apex only. Dr. Coupland, in a lecture upon mitral obstruction published in the *Clinical Journal* of March 21st, also lays stress upon the diagnostic value of a presystolic bruit, and states that the number of published cases in which such a bruit did not point to mitral stenosis "could almost be counted upon the fingers of one's hand." While this is possibly true of the typical presystolic bruit, those who have had some experience of cardiac disease in children may have noted that a low-pitched presystolic rumble may be associated with dilatation instead of contraction of the mitral orifice. I have seen two cases in which post-mortem examination revealed this fact, and on recently looking through the reports of thirteen cases of adherent pericardium in children dying in Guy's Hospital I found that a presystolic rumble was noted in two and an apical diastolic bruit in three instances without the presence of any mitral stenosis. Dr. Donkin in his recent work upon diseases of children refers to a similar case, a long diastolic bruit audible at the apex being found after death to be associated with dilatation of the mitral orifice. Dr Sturges, like other observers, seems until recently to have been deceived in some degree by the presystolic bruit. In a post-graduate lecture upon "Some Features in the Heart Disease of Childhood," published in THE LANCET, March 19th, 1892, five cases of heart disease were referred to, in four of which either a presystolic or a diastolic bruit at the apex was present. The general tenour of the lecture would lead one to suppose that Dr. Sturges considered these bruits probably indicative of mitral stenosis. Although he states that "a presystolic murmur does not afford absolute proof of heart disease," at the end of the lecture he refers to mitral stenosis as "the common sequel of rheumatic endocarditis." Possibly the conclusion expressed in the last phrase was arrived at from clinical experience. In the light of the post-mortem facts given in the more recent lecture we can hardly suppose that Dr. Sturges still holds the same view. He states: "the post-mortem experience of eleven years at the Hospital for Sick Children supplies but a single case of 'buttonhole' contraction of the mitral valve," and that there were only two other cases "of undoubted mitral narrowing." One point if possible of still greater interest than the presence of a presystolic bruit without mitral stenosis is the occurrence of a thrill. Dr. Sturges mentions five instances. The reports of the cases of adherent pericardium dying in Guy's Hospital (already referred to) give three examples of the association of a thrill with a presystolic rumble or diastolic bruit occurring without mitral stenosis, and a thrill was present in one of the two cases of presystolic bruit with dilated mitral orifice seen by myself. In three of these four cases the thrill was systolic, in the fourth its situation in the cardiac cycle was doubtful. Such a thrill, although possibly always systolic, adds to the difficulty of diagnosis of heart disease in children, and neither an apical thrill nor a presystolic rumble, occurring alone or combined with one another, can be relied upon as providing very trustworthy evidence of the presence of mitral stenosis.

I am, Sirs, yours truly,

Pembroke-road, Clifton, Bristol. THEODORE FISHER.

"PROPOSED SOCIETY OF FELLOWS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND."

To the Editors of THE LANCET.

SIRS,—Allow me to point out that it is not the fact that "a new Association or Society of Fellows of the Royal College of Surgeons of England has sprung into existence." What has taken place is the issuing by certain Fellows of a circular to all the Fellows of the College inviting them to a meeting with the view of establishing such a Society if thought desirable. The objects of the proposed Society, as expressed in the circular calling the meeting of March 8th, were those "of discussing College politics amongst themselves, of learning the views of the general body of Fellows on matters of professional interest, and of formulating in conference together such measures as they may deem it well to present to the Council at the proposed bi-annual meetings"; but whether these or any other objects are agreed upon as the basis of such a Society must obviously depend, not on those who have proposed its formation, but on those who may actually found it. My wish that the general meeting of Fellows, called for April 5th, may be and feel perfectly free, and that the aims of the proposed Society should not be prejudged, are my excuse for writing.

I am, Sirs, yours faithfully,

Sheffield, March 26th, 1894. R. J. PYE-SMITH.

COMPULSORY NOTIFICATION OF MEASLES AND PHTHISIS.

To the Editors of THE LANCET.

SIRS,—As the member of the Bollington Local Board who moved the resolution referred to in your issue of March 17th, I have been much interested in reading your remarks thereon. Where medical men disagree it is not for a layman to rush into the fray, and it is only in answer to your special appeal that I venture to ask room for the insertion of the following remarks. I can make no pretence to stating what the supporters of this proposal generally have in view. I can only briefly state the motives which actuated myself in making this proposition In the first place, as a general principle, when a medical officer duly appointed makes a suggestion which he thinks will tend to improve the health of his district I am in favour of the local authority giving it a fair trial, unless it can show good reason for not doing so. In this case the direct recommendation from the medical officer only applied to measles. The recommendation as to phthisis came, as you point out, from the county council. In the second place, I think the more exact information which a medical officer of health can have with regard to the prevalence of specific diseases the better. Therefore my second reason is in order that the medical officer may obtain useful information. My third reason is that I think such a course would have a wonderful educational effect on the proletariat. First, with regard to measles. There is still in country districts and even amongst members of local boards a prevalent superstition, based as I believe on ignorance, that an epidemic of measles or even of scarlet fever is a visitation of the Almighty, with which a board of health and individuals have no concern and no responsibility. Now, I think, Sirs, the majority of your readers will bear me out that such epidemics are, humanly speaking, due to preventable causes, and ought to be prevented. Further, there is a superstition that measles is a harmless infantile disease needing no special care in its management. This, also, I believe to be due to ignorance, and I believe that the mere fact of such a disease having to be notified would teach people that

it is not to be despised. Furthermore, as our medical officers pointed out, a mild case of scarlet fever is often indistinguishable to an untrained eye from measles, and a mild case of scarlet fever may by infection give rise to a virulent and sometimes fatal case. Now with regard to phthisis, my objects here were much the same—information for the medical officer and education for the people. I think there is sufficient consensus of medical opinion as to the contagiousness of this disease (referring to the lungs only) to make it worth while to try to educate people to take reasonable precautions in bad cases. Beyond this I, for my part, had no intention of going.

I am, Sirs, yours faithfully,

ALFRED J. KING, B.Sc. Lond. and Vict.,
Member of Bollington Local Board.

*** With the opinion that the medical officer's suggestions with regard to the maintenance of the health of the community should be followed we cordially agree, but it is not easy to make out a strong and practically working case for the compulsory notification of phthisis.—ED. L.

"THE NOTIFICATION OF PHTHISIS."

To the Editors of THE LANCET.

SIRS,—In reference to an article in THE LANCET of March 17th respecting the notification of phthisis, which I had hoped would have been discussed further, will you allow me to mention some reasons why it seems to me to be desirable that tuberculous disease should be notified? I have been interested in watching this disease for some time, and almost the only information I can obtain of its existence is by means of the deaths. I inquire into the probable origin, and advise as to the disinfection of the room and bedding where the illness has occurred. I ask about the milk supply, dampness of the house, the amount of light and ventilation, the occupation, whether there is a history of inheritance, whether there have been previous cases in the house or family, and I observe the conditions of cleanliness; but my inquiries are often too late to enable the friends to recall facts which are very important in forming a judgment of the cause of the disease. The main cause of tuberculous disease seems at present to be a matter upon which those who are most familiar with phthisis are not agreed. We require to know whether the illness is conveyed chiefly by means of milk, inheritance, dust, &c., and if we have notification we are likely to gather more correct information. When tuberculous disease occurs in connexion with one milk-supply, we can examine the cows of the milkseller and see if any are affected with tuberculosis, otherwise a milk supply might cause an epidemic of disease in a town without the medical officer of health knowing anything about it for some months after its commencement. I have found tuberculous cows in use for supplying milk to the public, and have had considerable difficulty in stopping the use of the milk, since we have at present no power to destroy and compensate. In short, it is impossible to advise correctly upon the measures necessary to check this disease until we are in possession of facts showing how it originates; and these facts we shall not get, I think, without notification.

I am, Sirs, yours faithfully,

Fainsfield, March 24th, 1894. A M.O.H.

RE CERTIFICATE IN PROOF OF DEATH BY THE DECEASED'S MEDICAL ATTENDANT IN CONNEXION WITH LIFE ASSURANCE.

To the Editors of THE LANCET.

SIRS,—I was much surprised at the under-noted question being put to me by Mr. H. J. Wilson, M.P., in cross-examination on the evidence I had given before the Royal Commission on Opium in Bombay. I therefore consider it incumbent on me to bring the matter before the medical officers in England through the medium of your able and influential journal.

Question.—Is it the custom in India (you know very well it is not in England) for the real cause of death to be always stated with absolute frankness?

Answer.—Unquestionably so. I never had a doubt before coming out to India that the real cause of death was not stated. It is the first time I have heard such a reflection on the medical practitioners of England.

The question was obviously put to me in order to throw doubt on my evidence in regard to the medical certificate of death in India, as I was unable to produce a single death in the "Oriental" through the use or abuse of opium. I think it my duty to bring to your notice this not very creditable attempt to serve a weak cause by an unworthy insinuation against the probity of the medical profession.

I am, Sirs, yours faithfully,

D. M'LAUCHLAN SLATER, F.I.A.,
Manager and Actuary, Oriental Life Office.

Albert-building, Bombay, March 7th, 1894.

"KITCHEN BOILER EXPLOSIONS."

To the Editors of THE LANCET.

SIRS,—I agree with the letter[1] from the engineer to the Manchester Steam Users' Association as to the value of safety valves in kitchen boilers used for high pressure hot water-supply; at the same time I prefer that the "pipes" and "reservoir tank" should be so fixed and arranged that the need of such valves and their consequent continued attention should be unnecessary. As you will see by enclosed prospectus, I went further in the matter of inspection and maintenance of kitchen boilers some years ago by keeping the whole of the water-supply, drainage, &c., under supervision and in good working order. Up to the present I am pleased to say the result has proved beneficial and satisfactory to both parties—insured and insurer. I am, Sirs, yours truly,

March 26th, 1894. D. J. B.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Trafford Park.

SOME time ago a special committee of the City Council was appointed to consider the question of purchasing the Trafford Park estate of 700 or 800 acres of ancient park land and a large mansion. It is in close proximity to part of the city, and is bounded on one side for a considerable distance by the Ship Canal, and on another by one of the main roads out of Manchester. Its acquisition and maintenance as an open space would be of inestimable value now, and still more so in the future. The conclusion arrived at was that, with the enormous undertakings the City already had in hand, such as the Ship Canal, the Thirlmere waterworks, and the sewage scheme, the proposed purchase should not be entertained. It is satisfactory to learn, however, that this committee has been reappointed, and it may be hoped that the occasion of obtaining so invaluable an open space will not be lost, as such an opportunity can never occur again. One of the local papers says: "The whole question will hinge on the probability—perhaps amounting to a certainty—of the corporation being able, in the event of purchase, to let out certain areas ..... for residential and other purposes, which will either cover the interest on the whole purchase money or go a long way towards it."

Overhead Wires.

Like many other towns, Manchester is covered with an intricate network of overhead wires—unsightly and dangerous—and the rapid extension of telephonic communication threatened a great increase of the nuisance. Happily, however, by an arrangement between the corporation and the National Telephone Company, the telephone wires will be taken underground. It is, perhaps, too much to hope that the telegraph wires will at some future day be also put out of sight, but it would be a most desirable change from their present threatening position.

Habitual Drunkards.

A paper was read at the last meeting of the Manchester Statistical Society on the Inebriate Acts of 1879–80 in Theory and Practice, with a suggested Amendment. The writer said there were better modes "than locking up these unhappy victims of temptation." He would make it not worth the while of a licensed dealer "to allow any notorious and described drunkard on his premises." After three convictions

[1] THE LANCET, March 17th, 1894.

description with a photograph of the inebriate, would be distributed to the licensed dealers, so that they would know all the local drunkards. On a fourth conviction the offender "might be advertised in the local papers." This does not seem a practicable suggestion, and, as one of the speakers said, the licence-holders would be taken at an unfair advantage. It was stated by some authorities that Manchester would have 10,000 habitual drunkards, so that the publican would have 10,000 photographs to look over before serving a doubtful customer—a difficult task on a busy day. The whole discussion showed how great a problem was involved in the treatment of habitual drunkards and how far we are at present from a solution of the matter that would please everyone.

Provident Dispensaries.

The discussion of Dr. Stewart's paper was continued at a special meeting of the Medico-Ethical Association. The problem he sought to solve was: "How to preserve the good and eliminate the evil that lie in the provident dispensary system"; and the remedy he proposes is "one large powerful association for the whole of Manchester and Salford." ..... "Call it a guild—a good name and short." ..... "Thus organised, the question of providing medical attendance for the working classes could be taken up, how best to procure attendance for the poor and for all who are not able to pay the usual private fees." The outcome of the discussion was the appointment of a provisional committee to arrange for calling a public meeting of the local profession to attempt the formation of the proposed association. It will be interesting to follow this effort to deal with the confessed failures of the provident dispensary system—to preserve the good it contains while eliminating the evil. Although the Medico-Ethical Association is taking the initiative in the matter the proposed guild is to be quite independent and in no way connected with it. The weak point of the scheme will probably be the difficulty of inducing all the medical men of the district to coöperate loyally.

March 27th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Typhoid Fever in the Shildon District, Darlington.

DR. FIELDEN'S report of the late severe outbreak of typhoid fever states that 196 cases were notified, but this number did not include cases of an irregular or mild type which actually existed, and subsequent events have led to the supposition that probably some deaths which were returned as dysenteric diarrhœa, peritonitis, &c., were in reality deaths from typhoid fever. It was worthy of note that many of the virulent cases occurred very near the line of several old watercourses, with which many house-drains were in direct connexion. Dr. Fielden makes, in his report, some valuable sanitary suggestions, and thinks that the county council should make elementary nursing and general sanitation subjects of instruction in all schools, and that public lectures should be given on the same topics.

The Deaf and Dumb and Blind Children in the North-Eastern Towns.

A conference of school boards under the Elementary Blind and Deaf Children's Act, 1893, has been held at Middlesbrough, at which representatives have attended from many of our north-eastern towns. A general opinion was expressed that it was undesirable to send children so afflicted to large institutions, but rather that there should be several small establishments.

Charitable Bequests by a Newcastle Lady.

The late Miss Eleanor Robson, of No. 134, Ryehill, who died recently, left, free of duty, to the Newcastle Infirmary £500; Newcastle Dispensary, £500; Newcastle Old Age Society, £500; Newcastle Blind Asylum, £500; Leicester Dispensary, £500; Leicester Old Age Society, £500; and Leicester Blind Asylum, £500.

Sport and Medical Charities in the North.

The young people responsible for the management of sports and carnivals provided in the pecuniary interest of charity are rapidly becoming important aids to our local charities. In Newcastle recently a sum of over £300 was distributed by the Press and Dramatic Committee of Sports, and this week the Charity Carnival Committee at Sunderland have distributed £165.

"Chlorodyne" Lozenges: Important Prosecution.

At the Lanchester Court, Durham, an important test case was tried under the Food and Drugs Act, Section 6 (said to be the first of the kind), on last Thursday. Elizabeth Wilson, a small confectioner, was summoned by an inspector under the Food and Drugs Act for selling a quarter of a pound of linseed liquorice and chlorodyne lozenges which, on being analysed by the county analyst, was found not to contain morphine, which was one of the essential constituents of chlorodyne. The prosecutor called Mr. Brown, chemist, and Dr. Taylor, Chester-le-Street, and both declared that morphine was an essential element of chlorodyne, and when they asked for the article they expected to get it. The defence was, it was admitted, that there was no morphine in the lozenges, and that the purchaser did not ask for "chlorodyne" lozenges, and that there was no proof that morphine was necessarily a component part of chlorodyne. Mr. Kirfoot, a large manufacturer of medicated lozenges at Manchester, said that he made chlorodyne by four different formulæ according to the purpose it was required for. Some had morphine in different proportions, and others, such as for retail lozenges like the present, had none whatever, as it might be dangerous to put morphine in retail lozenges to be sold indiscriminately. The barrister said he would call Mr. Escott, the city analyst of Manchester, and Mr. Richard Ellis, F.R.C.S. Edin., who said that there was no standard for the preparation of chlorodyne, that it was a coined name for a secret preparation, that the word "chlorodyne" or its synonym did not occur in the British Pharmacopœia, that an approach was supposed to be made to it by a preparation which was official, but still it was admitted to differ very much from the proprietary article, which was labeled "poison." He differed from the county analyst as to the necessity of morphine, which he thought would be highly dangerous. The magistrates at this stage stopped and dismissed the case, with costs. Leave was given to appeal.

Newcastle-on-Tyne, March 27th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Typhoid Fever Epidemic.

TYPHOID FEVER was responsible for 52 deaths during the eleventh week of the year, a decrease of 18 on the figures of the preceding week. Of this number 10 occurred amongst the garrison, and of the remainder no less than 20 took place in hospital, proving that the disease is most rife amongst the poor. Once more the sixteenth (Passy) and the seventeenth (Batignolles-Monceau) arrondissements show a clean bill of health in so far as typhoid fever is concerned. Large numbers of our compatriots inhabit the very pleasant Passy quarter, and I am glad to be thus able to reassure the friends of the numerous young English people who form a not inconsiderable proportion of the population of that district. Meanwhile inquiries are proceeding as to the origin of the outbreak. M. Dujardin-Beaumetz, the President of the Sanitary Council, is convinced that the Vanne water alone is to be incriminated, the districts fed by the Dhuys and the Avre having been almost completely free from the disease hitherto. He informed the Academy of Medicine that a commission had already left for Sens to conduct, *sur place*, an inquiry into the alleged contamination of the said water at its fountain head. This theory receives support from the study of the ravages caused by the epidemic amongst the soldiers composing the garrison of Paris. At the beginning of the year the disease had almost entirely disappeared from the Paris barracks. This immunity continued up to the middle of February. On the 15th of that month only 13 cases of enteric fever were under treatment, on the 20th there were 50, and on the 25th no less than 117. Nearly all the barracks are supplied with Vanne water, and the epidemic was pretty general. Two barracks, however, fed respectively by the Dhuys and an unknown source, have remained quite free from the invasion. Bacteriological examination of the Vanne water by the military authorities has brought to light only a few germ colonies, but Eberth's bacillus has not been detected. It is hardly necessary to say that the drinking of any but boiled water has been rigorously interdicted in the garrison. English visitors to Paris would also do well to avoid the consumption of unboiled water for the next few weeks.

Milk Diet and Asepsis of the Alimentary Canal.

MM. Gilbert and Dominici have discovered[1] that an exclusive milk diet has the effect of diminishing to a remarkable extent the number of microbes present in the fæces of man and the lower animals. An adult man, whose fæces contained 67,000 germs per milligramme, was restricted for five days to milk. At the end of two, three, four, and five days the germs had fallen to 14,000, 5000, 4000, and 2500 respectively. The weight of fæces passed had fallen from 175 to 73 grammes, and the number of microbes eliminated daily by the alimentary canal from nearly 12 milliards to 164 millions. In short, a milk diet reduced the microbism of the fæces to one-seventh of the normal. Sterilised milk has no greater effect than ordinary milk. The same results were obtained in the dog and the rabbit. In the former the number of fæcal microbes fell from 21,000 or 25,000, to 500 or 1000 per milligramme. The aseptic properties of milk are, moreover, still more far-reaching. The *savants* above named have recently shown that the dog's stomach contained at an advanced period of digestion 50,000 germs per milligramme, that the duodenum, of all the portions of the alimentary canal the poorest in microbes, contained 30,000; that the number of micro-organisms in the small intestines increased progressively from the pylorus to the ileo-cæcal valve, exceeding in the ileum 100,000; and that finally, in the large intestine, the number was about 30,000. Now, in a dog fed for two weeks on milk, and killed two hours after the ingestion of 300 grammes of milk, the stomach contained only 100 germs per milligramme, the duodenum 50, the jejunum 100, the ileum 1300, and the large intestine 1275. The foregoing facts explain the beneficial effects of a strict milk diet in certain putrefactive forms of dyspepsia, in acute and chronic enteritis with diarrhœa, in dysentery, in typhoid fever, &c., as also in cases in which the liver is performing ill its anti-toxic functions. The marvellous results given by a milk regimen in Bright's disease and in its formidable complication, uræmia, are also thus explained.

The Sterilisation of Drinking Water by Alum.

The presence of enteric fever in our midst impels Dr. Constantin Paul to recall to our minds the remarkable sterilising properties of crystallised alum. When the salt is added to water in the proportion of 20 centigrammes to 1000 grammes sterilisation is complete in twenty-four hours, and remains so for four days. The water is not rendered indigestible, nor is any strange taste imparted to it. Dr. Dujardin-Beaumetz, however, expressed his preference for the boiling of water, and herein all sensible people will agree with him. M. Vigier states that the indigestibility of boiled water disappears when it has been left standing in a cool place for twenty-four hours.

French Surgical Congress.

This annual congress, which has hitherto been held in Paris, will (so says the *Progrès Médical*) very likely be held in October next at Lyons, where the approaching Universal Exposition will then be in full swing. Professor Tillaux, the president, has given his consent to this innovation; it remains for the members of the Congress to approve of this by their votes. Any attempt at decentralisation should be heartily encouraged, and France would do well to follow in the footsteps of England in this respect.

The Perils of Football.

The article in THE LANCET of last week on this subject has excited the greatest interest in French professional and lay circles. Almost all the political papers give copious extracts from it. Football is a game that is making great headway in this country, and the appearance of the remarkable article referred to cannot but be beneficial in calling attention to the dangers of that otherwise healthy and manly form of recreation.

March 27th.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

Government Changes for 1894.

AMONG the recommendations of the Committee of Finance to the Council of Ministers for the current year there are a few points which interest sanitarians. It must be remembered that the Finance Committee consists of the Finance Minister himself (who is an intelligent Copt), three Englishmen, one Frenchman, and one Egyptian Jew of English proclivities. It is a powerful body, much more inclined towards progress than the Cabinet itself.

The octroi duties on eleven towns are to be abolished because the expenses of collection swallowed up at least half the receipts. This is a wholesome reform and enables the townspeople to get their food cheaper and better. A sum of £5000 has been allotted to build slaughter-houses, as the Government has now been awakened to the fact that several towns have for years been paying a slaughter-house tax, though the Government has never fulfilled its part of the contract by building the necessary abattoirs. The budget of the Education Department has been increased by £12,000 in order to carry out an old idea of establishing at least 500 primary schools in the villages. As these schools will be entirely in the hands of inefficient natives it would have been better to have given this sum to those of the schools which are under European supervision and are starving for want of funds. However, the whole budget has now been raised to £105,000, a great improvement on 1887, when it was only £69,000. The Sanitary Department has many urgent needs, but this year it receives only £2100 extra in order to increase the salaries of sanitary inspectors and to provide the staff for the new hospital for infectious disease outside Cairo. There is a talk of municipalities in the future for nine principal towns, but the inhabitants are not yet ready to govern themselves, so that it is not entirely to be regretted that the powers have not as yet sanctioned this. The Prison Department receives an extra amount of £5000, chiefly to be expended on food and such necessaries as will, it is hoped, prevent any recurrence of typhus and relapsing fevers amongst the prisoners. Lastly, £50,000 has been voted for the drainage of Cairo, but this scheme is for the moment postponed, because the advisers of the Government have decided that it is useless to think of spending a million pounds until some sort of sanitary law is decreed which will enable them to deal with offenders against improved sanitation. The powers were asked nearly a year ago to consent to such a law, but have not yet replied to the Egyptian Government.

Presentation of a Bust to the Medical School.

In January the son of the late Dr. Clot Bey offered to the School of Medicine a statuette of his late father, and a day was fixed for its reception under the auspices of the French and English Consuls-General; but some of the members of the Government, tried to prevent the gift on the ground of all statues being contrary to the Mahommedan religion. When they were reminded that a huge statue had recently been erected by the Government itself to the memory of Ibrahim Pasha in the middle of modern Cairo they withdrew their objections and only stipulated that the ceremony should be shorn of its public character. Eventually the bust was unveiled by Riaz Pasha and by Dr. Lortet of Lyons, who in a well-chosen speech insisted upon the creation of chairs and laboratories in the school for the study of bacteriology and parasitology. Dr. Clot in 1833 was the first Christian who was ever made a Bey, and under the auspices of Mehemet Ali Pasha and the French Government he successfully inaugurated the School of Medicine, which still exists. There were once 1500 students in it, and Dr. Clot himself, while lecturing on surgery, was attacked by a fanatical student, who aimed three dagger thrusts at him before he was disarmed. Dr. Clot's work included establishments for the blind, the introduction of vaccination, and rules for quarantine against the Plague.

Medical Visitors to Cairo.

Besides Dr. Lortet, who came from Lyons with an assistant expressly to try to discover some of the unknown points connected with the distoma hæmatobium, and who was rewarded by discovering one female worm in process of migration, there have been, as usual, many medical visitors to Cairo during the winter. Among those best known to English readers are Sir Spencer Wells, Dr. Hermann Weber, and Mr. Liebreich.

Cairo, March 21st.

[1] Société de Biologie, March 17th.

MEDICAL MAGISTRATES.—Mr. Francis H. Furnival, M.R.C.S., L.S.A. Eng., of Auburn, New South Wales, and Mr. James O. Jefferies, M.B. Aberd., M.R.C.S. Eng., of Newton, Sydney, have been appointed Justices of the Peace for the Colony; and Mr. Francis William Counter, M.B. Aberd., of Willunga, South Australia, has been appointed a Justice of the Peace for South Australia.

Obituary.

WILLIAM BARNARD CLARKE, M.D. EDIN.

THE death is announced, at the age of eighty-seven, of Dr. W. B. Clarke, at Nostell, near Wakefield, on Tuesday, March 20th. He obtained his degree at the Edinburgh University in 1834 and was at the time of his death senior M.D. of that university. Dr. Clarke was born at Ipswich and practised for a short while in that town. He then went to North Shields, and afterwards to Walton-on-the-Naze. A very great part of his life was devoted to the study of natural history, and he presented a fine collection of objects to the Ipswich Museum, of which institution he was the first curator. The deceased gentleman was much honoured by the inhabitants of his native town, with whom his family has for generations been personally connected.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—The following candidates have passed in the subjects mentioned below:—

Surgery.—M. T. Archdall, Charing-cross Hospital; P. Best, University College; A. H. Bird, St. Mary's Hospital; G. J. Branson, Birmingham; L. L. Burton, London Hospital; E. S. Chilcott, St. Mary's Hospital; T. M. Clayton, Durham; E. H. J. Danaher, London Hospital; R. J. Farman, Charing-cross Hospital; J. D. Galloway, London Hospital; W. E. Stanton, London Hospital; and S. A. Stride, London Hospital.

Medicine, Forensic Medicine, and Midwifery—A. W. Austen, Westminster Hospital; T. W. W. Burgess, St. Bartholomew's Hospital; L. L. Burton, London Hospital; H. C. Dixon, London Hospital; J. D. Galloway, London Hospital; C. D. Garrett, Westminster Hospital; K. M. Hunter, Royal Free Hospital; D. S. Owen, London Hospital; G. H. Pooley, St. George's Hospital; and C. W. Williams, St. Bartholomew's Hospital.

Medicine and Forensic Medicine—P. H. Court, Middlesex Hospital.

Medicine and Midwifery.—F. H. de G. Best, St. Bartholomew's Hospital.

Medicine.—W. C. Lattey, St. George's Hospital.

Forensic Medicine and Midwifery—R. J. Farman, Charing-cross Hospital; and G. H. Poole, St. George's Hospital.

Forensic Medicine.—H. R. Evans, St. Thomas's Hospital.

Midwifery.—R. B. Allen, St. Mary's Hospital; F. E. Feilden, St. Bartholomew's Hospital; A. T. Savage, Birmingham; and H. C. Venis, St. Mary's Hospital.

To Messrs. Austen, P. Best, Bird, Burgess, Burton, Chilcott, Danaher, Farman, Galloway, Lattey, Owen, Pooley, and Venis was granted the diploma of the society entitling them to practise medicine, surgery, and midwifery, and enabling the holder to compete for medical appointments in the army, navy, and India service, also for Poor-law appointments.

VICTORIA UNIVERSITY.—The following gentlemen satisfied the examiners in the Second M.B. and Ch.B. Examination:—

Anatomy and Physiology.—George Ashton, F. J. Batten, Robert Bleasdale, H. M. Brown, A. H. Burgess, H. M. Crake, H. B. Cross, Harry Hamer, Eustace Hutton, W. F. Jackson, K. H. Jones, E. E. Laslett, F. E. Marshall, J. G. Martin, W. H. S. Nickerson, A. E. Normington, G. C. Phipps, F. S. Pitt-Taylor, John Prentice, Frank Pritchard, A. L. Rhind, J. S. Ross, S. T. Rowling, C. R. Schofield, A. B. Smallman, J. E. Smith, Harry Stansfield, F. E. Taylor, Livsey Tong, W. C. Varley, H. de P. B. Veale, J. V. Watson, Alfred Wightwick, A. A. Wood, James Wood, H. B. Woodcock, and William Wright.

Materia Medica and Pharmacy.—E. L. Anderson, George Ashton, Edgar Baldwin, F. J. Batten, H. M. Brown, W. J. F. Burges, A. H. Burgess, R. W. Carmichael, J. B. Clarke, Willie Cunliffe, W. A. Helm, V. R. Hendry, W. F. Jackson, J. R. Lambert, Newman Neild, W. H. S. Nickerson, John Prentice, Frank Pritchard, A. L. Rhind, A. T. Sissons, Oliver Smithson, Harry Stansfield, F. E. Taylor, Harold Thorp, Livsey Tong, W. C. Varley, James Wood, and H. B. Woodcock.

The Scholarship in Medicine was awarded to A. H. Burgess.

The following gentlemen satisfied the examiners in Part I. of the Final M.B. and Ch.B. Examination:—

Hubert Armstrong, R. E. Bickerton, W. M. Brown, J. S. Dockray, J. W. Hainsworth, H. F. Jeffery, A. W. Lilley, Percy McDougall, T. U. Mercer, Stanley Pickering, J. H. Ray, J. F. Rimmer, S. J. Ross, H. A. Scott, Bernard Stahlknecht, and O. B. Trumper.

The following satisfied the examiners in Part II.:—

W. J. Bowden, H. S. Brightmore, W. M. Brown, Edmund Harrison, Joseph Jones, Douglas Seaton,* H. S. Smith, and Peter Thompson.*

* Awarded honours.

ROYAL COLLEGE OF SURGEONS, IRELAND, SCHOOLS OF SURGERY.—The following prizes have been awarded in anatomy for the session 1893-94:—Descriptive Anatomy.—Junior: Mr. Conway, first prize, £3 and medal; and Mr. Palmer, second prize, £1 and certificate. Senior: Mr. Kennedy, first prize, £3 and medal; and Mr. Power, second prize, £1 and certificate. Practical Anatomy.—First year: Mr. Palmer, first prize, £3 and medal; and Mr. Leventon, second prize, £1 and certificate. Second year: Mr. Sweeney, first prize, £3 and medal; and Mr. Eardley, second prize, £1 and certificate. Third year: Mr. Carroll, first prize, £3 and medal; and Mr. Hamilton and Mr. Montgomery, equal, second prize, £1 and certificates.

THE JENNER RELICS.—The collection of Jenner relics, which has been removed from the Bristol Exhibition, is now on view at the First Avenue Hotel, Holborn, London. It is intended to offer the collection to the Royal College of Surgeons, and a subscription list is placed upon the table where the collection is shown, in which visitors are requested to write their names and subscriptions. There are several very poor relatives of the Jenner family still living, and it is proposed to devote a portion of the subscriptions to their relief.

BEQUESTS AND DONATIONS TO HOSPITALS.—The executors of the late Mr. Charles Priestley, of Cottingley Hall, Bingley, have apportioned £5000, free of legacy duty, as follows—viz: £3500 to the trustees of the Bradford Infirmary, the interest of which is to be used by the Samaritan Society for the benefit of consumptive cases in Bradford and the district; £300 each to the Bradford Infirmary and the Children's Hospital; £200 to the Convalescent Fund of the Children's Hospital; £100 to the Bingley Cottage Hospital; £75 to the Eye and Ear Hospital; and £50 to the Ilkley Hospital.—Mr. Ambrose Bassett, late of Basingstoke, Hants, has bequeathed £100 each, free of legacy duty, to the Royal Hospital for Incurables, Putney, and the Hospital for Sick Children, Great Ormond-street, London.—The late Mr. J. Jowett Jackson, of Francis-street, New Leeds, has bequeathed £200 to the Leeds General Infirmary.—By the will of the late Mr. N. H. Williamson, of Manningham, £500 is bequeathed to the Bradford Infirmary and £250 to the Bradford Children's Hospital.—Mr. Frederick Wood, late of Regency-square, Brighton, has bequeathed £300 each to the Sussex County Hospital, the Alexandra Hospital for Sick Children, and the Convalescent Home, Dyke-road, Brighton.—The late Mr. John G. Richardson of Bournemouth has bequeathed £100 each to the Bournemouth Cottage Hospital and the Provident Dispensary.—Mr. W. H. Avery, late of Finstall, has bequeathed £200 to the Cottage Hospital, Bromsgrove, in reversion upon the death of his widow.—The late Miss Margaret Macfarlane of Monkshaw, Paisley, has bequeathed £2000 to the Paisley Infirmary.—Miss A. Bagwill Cuming, late of Kennington Park-road, has bequeathed £1000 to the Royal Hospital for Incurables.—The late Mr. Wm. Fletcher of Turnham Green has bequeathed £100 to the West London Hospital.—Sir Thos. Brocklebank has presented £1000 to the Liverpool Royal Infirmary, for the endowment of a bed.—The late Mr Joseph B. Westrope of Caldecote, Herts, has bequeathed £500 to the Royston Hospital.—The President of the Hospital for Women, Liverpool, has received £500 from Mr. Philip Blessig, in aid of the endowment fund for the addition of six beds to the charity.—The Honorary Treasurer of the Harrogate Cottage Hospital has received a donation of £100 from the Misses Shutt of Harrogate.—Mr. Benyon of Englefield House, Reading, has sent a donation of £500 to the Royal Berkshire Hospital.—The Treasurer of the Leeds Public Dispensary has received £100, duty free, bequeathed to that institution by the late Miss Amelia Pollard.—The trustees of the late Mr. Thomas Sturge, have paid £2000 to the London Temperance Hospital in connexion with the trust fund.—A donation of £250 has been received from Mr. George Palmer of Reading for the general fund of the Royal Berkshire Hospital.—Mr. Henry Boys, late of Walsall, has bequeathed £2000 to the Walsall Cottage Hospital.—The late Mr. Wm. Henry Rawson of Bramhope, Torquay, and Sowerby, Yorks, has bequeathed £500 to the Halifax Infirmary and Dispensary and £250 to the Hospital for Incurables, Putney.—Miss Ellen Tuson, late of Preston, has bequeathed £5000 to the Preston and County of Lancaster Infirmary.—The treasurer of the Dental Hospital, Leicester-square, has received from Mr. H. Harben, L.C.C., the sum of £500 as a special donation towards the fund required for the purchase of a new site for the hospital.—Baron de Hirsch has given £500 towards the funds of the London Lock Hospital and Rescue Home.—The Meath Hospital, Dublin, has received £50, bequeathed by

Miss S. S. Smith, and £50 as a donation from Messrs. A. Guinness and Co.—Rotunda Lying-in Hospital, Dublin: The fancy dress ball organised by Mrs. Warren in aid of the building fund of this hospital realised a sum of £85.—Cork Ophthalmic Hospital: Lady Arnott has obtained the use of a portion of the Cork municipal buildings for a bazaar to be held early in October, and which she is organising for the purpose of helping to build an ophthalmic institution in that city.

LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY, LIMITED.—A meeting of the council of this society was held at 57, Harley-street on March 20th. Twenty-four new members were elected and Mr. Howard Marsh was nominated as a vice-president of the society. A deputation on behalf of Mr. R. B. Anderson was introduced by the Earl of Stamford and resolutions were passed condemnatory of the treatment Mr. Anderson had received, and in favour of supporting his appeal to the Privy Council. It was decided that the annual dinner of the society should be held at the Restaurant Frascati, in Oxford-street, on Tuesday, June 19th, and that ladies should be invited to be present. Mr. Mead was authorised to register the new offices of the society. The application of a member for defence in a threatened action for slander was dealt with. The next council meeting will be on April 3rd.

FOOTBALL CASUALTIES.—On the 23rd inst., while playing a game on the ground of the Kirkdale Club, Walton, a young man sustained a compound fracture of the leg and other injuries, and was admitted to the Stanley Hospital, Liverpool.—On Saturday last, in a match at Skipton, between the Skipton and Featherstone Trinity teams, a Skipton forward fractured his clavicle. On the same day, during a match on the Driffield Recreation Ground, between the Hull B and Driffield teams, a player fractured his clavicle.—On Monday last the following accidents occurred: While playing a game at Roundhay Park, Leeds, a youth aged thirteen years fractured his leg and was admitted to the Infirmary.—During the progress of a match at Broadlands Park, Romsey, between a Bournemouth team and one from the Grammar School, Southampton, a youth fractured his clavicle, and a player in a competition match at Broseley sustained a similar injury.

PROPOSED SOCIETY OF FELLOWS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.—A meeting of Fellows was held in the Liverpool Medical Institution on March 20th, under the presidency of Mr. Rushton Parker, Mr. R. W. Murray being voted secretary. Of twenty-three Fellows in the immediate neighbourhood (including eighteen in Liverpool itself) ten were present at the meeting. The following resolutions were carried unanimously:—1. This meeting approves of the objects of the proposed Society of Fellows of the Royal College of Surgeons of England, as referred to in the circular dated March 14th, signed by Mr. Herbert W. Page and Mr. Fred. C. Wallis, and desires to constitute itself the nucleus of a branch of the Society including Fellows living in Liverpool and district. 2. That the above resolution be communicated by Mr. Rushton Parker to Mr. Herbert W. Page before the meeting in London on April 4th. 3 That Mr. Rushton Parker, Mr. R. W. Murray, and Dr. Permewan be a provisional committee to promote the Society in Liverpool and district.

UNIVERSITY COLLEGE HOSPITAL.—Mr. Henry Lucas, the chairman of the committee, presided at the annual meeting of the governors of this hospital on the 21st inst., and moved the adoption of the report, by which it appeared that 3228 in-patients had received the benefits of the charity, against 2799 in 1892, whilst the numbers of out-patients were represented by 49,486, as against 36,999. That large increase was explained in the report as being due partly to the closing for two months of the Middlesex Hospital for repairs; it was satisfactory, however, that the strain thus put upon the resources of the institution did not prove to be unendurable. The committee had to lament a falling off to some extent in the general subscriptions; but, on the other hand, the subscriptions derived from the People's Contribution Fund had increased. No progress had been made with the building fund, as the amount hitherto raised had not reached the stipulated sum of £30,000. It was hoped that at the annual meeting, which was to be held on June 13th, the friends of the hospital would come forward with substantial help in view of its financial difficulties.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—The forty-fifth annual meeting of the governors of this hospital was held in the Bell Medical and Surgical Library on Tuesday, March 13th, 1894. The report stated the number of in-patients treated during the past year to have been 2286. Of these, 933 were medical and 1353 were surgical cases; 1590 accidents or urgent cases were admitted without tickets. Among the in-patients were included 127 cases of fever, erysipelas, measles, &c., treated in the fever block; and 437 children under ten years of age, treated in the children's department. The total number of out-patients treated during the past year was 14,918. Of these, 6332 were medical and 8586 were surgical cases; 6048 accidents or urgent cases were treated without tickets. The number of attendances of out-patients during the year was 51,629, showing an average of 993 per week. The ordinary income for the past year has amounted to £7611 4*s.* 3*d.*, being an increase of £107 19*s.* 11*d.* as compared with the previous year. There was a slight decrease in the amounts received from annual subscriptions and from the Hospital Sunday collections; but an increase of £115 5*s.* 10*d.* in the amount received from the Hospital Saturday collections is recorded. The total expenditure for the past year has amounted to £8615 4*s.* 3*d.*, showing an increase of £731 17*s.* 3*d.*; but the large balance of £2149 is due to the treasurer.

Parliamentary Intelligence.

HOUSE OF COMMONS.

WEDNESDAY, MARCH 21ST.

New Bills.

LEAVE was given to introduce the following Bills:—Mr. Courtney: To amend the law relating to the Sale of Intoxicating Liquors. Sir H. James: To amend the Factory and Workshops Act, 1891.

THURSDAY, MARCH 22ND.

Canada and Pleuro-pneumonia.

Dr. Farquharson asked whether a communication had been received from the Canadian Government respecting the freedom or otherwise of pleuro-pneumonia from the ports of that province.—Mr. Gardner said that papers on the subject had been received, and his attention was being directed to their contents, but the information comprised in them was as yet imperfect, and he was therefore not in a position to state definitely what course it would be desirable to adopt in the matter; he would, however, take care that no unavoidable delay should be incurred in dealing with it.

Gresham University.

In answer to Mr. Carvell Williams, Mr. Asquith said that careful attention was being paid to the recommendations accompanying the report of the Royal Commissioners on the draft charter of the Gresham University; what effect, however, was likely to be given to those recommendations was a question which would have to be dependent to a certain extent on the unanimity shown by the different bodies interested in accepting the suggestions and recommendations of the Commission.

Belfast Lunatic Asylum Arrangements.

Mr. M'Cartan asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that a strong feeling existed among the governors of the Belfast Asylum in favour of having the asylums of Belfast and County Antrim managed under one board of governors, as suggested before the Committee of that House on the Belfast Asylum Bill; and, whether, considering the advantages to the patients likely to arise from such a course, the Local Government Board would take into consideration the advisability of carrying it out.—Mr. John Morley replied that he was informed that a proposal to consider the retention under the joint control of the town council and the grand jury of the present city asylum and the new county asylum for Antrim was negatived by 10 to 7. Under the provisions of the Belfast Asylums Act of 1892, which constituted the city and county into separate asylum districts and required the appointment of separate boards of governors, it would not be competent for the Board of Control to sanction the re-amalgamation of the two districts.

THURSDAY, MARCH 29TH.

The University Question.

Sir Albert Rollit asked the Chancellor of the Exchequer whether, and when, it was intended to propose legislation in pursuance of the report of the University of London Commission, and what would be the general character of procedure in reference to the subject.—Sir William Harcourt said this matter was under the careful consideration of the Government, and he was afraid it was impossible to introduce legislation on the subject this session.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ATWOOL, W. T., M.R.C.S., has been appointed Ophthalmic Surgeon to the Torbay Hospital, Torquay.

BALLARD, CHAS., M.R.C.S., has been reappointed Medical Officer for the Fifth Sanitary District of the Abingdon Union.

BASSETT, W. F., M.R.C.S., L.S.A., has been appointed Honorary Consulting Medical Officer to the Bathurst Hospital, New South Wales.

BASSETT, W. F. P., M.D. Edin., M.Ch., M.R.C.S., has been appointed Honorary Surgeon to the Bathurst Hospital, New South Wales.

BOOTH, JAMES, L.R.C.P., L.M., L.R.C.S. Edin., has been appointed Medical Officer, *pro tem.*, to the Barcaldine Hospital, Queensland.

BRAY, PERCY D., M.R.C.S., has been appointed Public Vaccinator at Carlsbrook, Victoria, Australia.

BROWN, C. P., M.R.C.S., L.S.A., has been reappointed Medical Officer of Health for the Knighton Rural Sanitary District.

BURKITT, W. A. HANDCOCK, M.B., Ch.B Dublin, has been appointed Medical Officer to the Goulburn Hospital, New South Wales.

CHADWICK, CHAS. M., M.A., M.D., M.R.C.P., M.R.C.S., has been appointed an Honorary Physician to the Leeds General Infirmary, vice Jacob.

CHALLINOR, H. S., M.R.C.S., has been reappointed Medical Officer for the Nos. 3 and 4 Sanitary Districts of the Abingdon Union.

CROFT, E. O., L.R.C.P. Lond., M.R.C.S., has been reappointed Honorary Demonstrator in Midwifery in the Medical Department of the Yorkshire College.

DARROLL, W. B., L.R.C.P. Lond., M.R.C.S., has been reappointed Medical Officer for the Brampton Brian Sanitary District of the Knighton Union.

DICK, ROBT., M.B., Sydney, has been appointed Medical Officer for the hospital at Gulgong, New South Wales.

DODS, JAMES, L.R.C.P., L.R.C.S. Edin., has been appointed Surgeon to the St. George Hospital, Queensland, vice Doyle.

EDMUNDS, D. T., L.R.C.P., L.M. Edin., M.R.C.S., has been appointed Honorary Surgeon to the Bathurst Hospital, New South Wales.

EDWARDS, E. C., M.B., C.M. Edin., has been appointed Junior House Surgeon to the East Suffolk and Ipswich Hospital.

FYFFE, W. KINGTON, M.B., M.R.C.P., has been elected Medical Registrar to St. George's Hospital.

GRAVES, T. W., M.R.C.S., has been reappointed Medical Officer for the Beguildy Sanitary District of the Knighton Union.

GOYDER, G. A., has been appointed Public Analyst for the purposes of the Food and Drug Acts for Adelaide, South Australia.

GUINAND, PAUL, M.D. Berne, L.R.C.P. Lond., M.R.C.S., has been appointed Health Officer for Narracan Shire, Victoria, Australia, vice Johnstone, resigned.

JAMES, WM. H., M.B. Melb., has been appointed Health Officer for Berwick Shire, Victoria, Australia.

JERMYN, WALTER H., M.B., Ch.B. Melb., has been appointed Government Medical Officer and Vaccinator for the district of Nyngan, New South Wales.

JOHNSTONE, G. W., L.R.C.P., L.M. Edin., L.F.P.S. Glasg., has been reappointed Medical Officer for the Upholland Urban Sanitary District.

KIRKLAND, H., M.B., Ch.M. Glasg., has been reappointed Honorary Surgeon to the Bathurst Hospital, New South Wales.

LANE, THOS., L.K.Q.C.P., L.M., L.R.C.S. Irel., has been appointed Medical Officer to the Inverell Hospital, New South Wales.

MACALISTER, CHARLES J., M.B. Edin., M.R.C.P., has been appointed Consulting Physician to the Liverpool Schools for the Deaf and Dumb.

MARSDEN, R. S., M.B., C.M. Edin., D.Sc., D.P.H., F.R.S.E., F.I.C., F.C.S. Lond., has been reappointed Medical Officer of Health, Birkenhead.

MCCALL, JOHN, M.B., Ch.M. Glasg., has been appointed Government Medical and Health Officer for the district of Devon West, Tasmania.

MCINERY, JOHN, M.D. New York, L.S.A. Lond., has been appointed Public Vaccinator for North Carlton, Victoria, Australia.

MCKILLOP, ROBT., F.R.C.S., L.M., L.R.C.P. Edin., has been appointed Medical Officer to the Goulburn Hospital, New South Wales.

MILNE, JAS., M.B., Ch.M. Edin., has been appointed Surgeon to the Hospital at Cloncurry, Queensland.

MOORE, J. B., L.K.Q.C.P., L.R.C.S. Irel., has been appointed Honorary Surgeon to the Bathurst Hospital, New South Wales.

MURRAY, J. J. G., L.R.C.P., L.M., L.R.C.S. Edin., has been reappointed Medical Officer to the Parkes District Hospital, New South Wales.

NEWMARCH, B. J., L.R.C.P. Lond., M.R.C.S., has been appointed a Surgeon to the Naval Brigade, New South Wales.

NEVINS, J. ERNEST, M.B. Lond., M.R.C.S., has been appointed Honorary Medical Officer to the Liverpool School for the Deaf and Dumb, vice Macalister.

O'CONNOR, J. E., M.B., B.Ch Irel., has been appointed Medical Officer for the Glenfield Sanitary District of the Blaby Union.

PAGE, HERBERT W., M.C. Cantab., M.B., F.R.C.S. Eng., has been appointed Consulting Surgeon to the Railway Passengers' Assurance Company, vice Holt.

PRICE, J. L., M.R.C.S., has been reappointed Medical Officer for the No. 2 Sanitary District of the Kettering Union.

RENNIE, E. H., D.Sc., F.C.C., has been appointed Public Analyst for the purposes of the Food and Drug Acts for Adelaide, New South Wales.

SELBY, T. J., M.B. Durh., L.R.C.P., L.M., L.R.C.S. Edin., L.F.P. & S. Glasg., has been appointed Medical Officer to the Runcorn Union Workhouse, vice Robinson.

SEMPLE, A., M.B., Ch.M Glasg., has been appointed Medical Officer to the Parkes District Hospital, New South Wales.

SHAW, R. F., L.R.C.P., L.R.C.S. Edin., L.M., L.F.P.S. Glasg., has been appointed Medical Officer for Kirburton.

SMITH, F. P., L.R.C.P., L.M., L.R.S.C. Irel., has been appointed House Surgeon to the National Eye and Ear Infirmary, Dublin.

STEVENSON, EDGAR, M.D., C.M. Aberd., has been appointed Assistant Surgeon to the Liverpool Eye and Ear Infirmary.

SYMES, R. H., L.K.Q.C.P., L.M., L.R.C.S. Irel., has been appointed Surgeon to the Victoria Hospital at Barcaldine, Queensland.

TOLLER, SEYMOUR GRAVES, M.B. Lond., has been appointed Resident Assistant Physician at St. Thomas's Hospital.

TREVELYAN, E. F., B.Sc. Lond., M.D., M.R.C.P., M.R.C.S., has been appointed Professor of Pathology in the Medical Department of the Yorkshire College, vice Jacob.

WEBSTER, A. G., M.R.C.S., has been appointed a District Medical Officer by the Colne Valley Sanitary Authority.

WILDING, W. F. W., L.R.C.P. Lond., M.R.C.S., has been reappointed Medical Officer of Health for Hindley.

WILLIAMS, EZRA H., M.D., Ch.M. Toronto, M.C.P.S. Ont., L.R.C.P. Lond., has been appointed Health Officer for Upper Yarra Shire, Victoria, Australia, vice Crooke, resigned.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BEDFORD GENERAL INFIRMARY AND FEVER HOSPITAL.—House Surgeon for one year. Salary £100 a year, with apartments, board, lodging, and washing.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—House Surgeon, for six months. Salary at the rate of £50 per annum, with board and residence.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—Pathologist. Salary 100 guineas per annum. Applications to the Secretary, at the office, 24, Finsbury-circus, E.C.

DENTAL HOSPITAL OF LONDON, Leicester-square.—Two Assistant Anæsthetics.

HOSPITAL FOR WOMEN (LONDON SCHOOL OF GYNÆCOLOGY), Soho-square, W.—Clinical Assistants.

LIVERPOOL NORTHERN HOSPITAL.—Resident House Surgeon's Assistant (ambulance duty) for six months. Board and lodging provided.

MORPETH DISPENSARY.—House Surgeon. Salary £120 per annum, with furnished house, coal, and gas.

NORTHAMPTON GENERAL INFIRMARY.—Resident Dresser, for six months. Board, lodging, and washing provided.

OLDHAM INFIRMARY.—Senior House Surgeon. Salary £80 per annum, with board and residence.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Resident Medical Officer for six months. Salary at the rate of £100 per annum, with furnished apartments and board.

ROYAL VICTORIA HOSPITAL, Bournemouth.—House Surgeon and Secretary. Salary £100, with board.

SHEFFIELD SCHOOL OF MEDICINE.—Tutor, to take charge of Dissecting-room and hold Classes in Anatomy and Physiology. Salary £124 per annum.

THE COPPICE, Nottingham.—Assistant Medical Officer at this Asylum for Private Patients, unmarried. Salary £120 per annum, with furnished apartments, board, washing, and attendance.

UNIVERSITY COLLEGE, Bristol.—Faculty of Medicine.—Medical Tutor. Stipend £125 per annum. Applications to Dr. E. M. Skerritt, Dean.

YORK DISPENSARY.—Resident Medical Officer, unmarried, to visit and attend the sick poor at their own homes. Salary £150 a year, with furnished apartments, coals, and gas.

Births, Marriages and Deaths.

BIRTHS.

BENSON.—On March 18th, at Grosmont, Pontrilas R.S.O., the wife of H. P. D'Arcy Benson, M.B., Ch.M. Edin., of a son.

HARFORD-BATTERSBY.—On March 27th, at Mornington-road, Bow, E., the wife of Dr. C. F. Harford-Battersby, of a son, who died at birth.

SLAUGHTER.—On March 25th, at 19, Trebovir-road, Earl's-court, London, the wife of J. W. Slaughter, Surgeon, R.N., of a daughter.

DEATHS.

BARTON.—On March 10th, at Mentone, France, John K. Barton, M.D. T.C.D., F.R.C.S.I., of Merrion-square, Dublin.

CLARKE.—On March 20th, at Fairy Cottage, Rostell, Yorks, William Barnard Clarke, M.D., formerly of Ipswich, aged 87.

GUEST.—On the 21st inst., at his residence, Arlington-place, 263, Oxford-road, Manchester, Ellis Southern Guest, Surgeon, aged 70. No cards.

MACFARLANE.—On March 17th, at Tollington-park, N., William Macfarlane, M.D., aged 65 years.

NELSON.—On March 26th, Thomas Andrew Nelson, M.D., of Nottingham-terrace, York-gate, Regent's Park, N.W.

PYCROFT.—On March 23rd, at Wellesley, Torquay, George Pycroft, M.R.C.S.E., of Camborne-terrace, Richmond, Surrey, aged 74.

SMITH.—On the 25th inst., Henry Smith, F.R.C.S. Eng., aged 70, of 7, Wimpole-street, W., and Summerhill, Horsell, Surrey.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 29th, 1894.

	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Mar. 23	30·43	E.	44	43	90	55	41	..	Foggy
,, 24	30·42	E.	41	41	89	57	39	..	Overcast
,, 25	30·17	E.	50	46	104	61	41	..	Bright
,, 26	30·05	S.E.	45	43	106	63	39	..	Bright
,, 27	30·10	S.E.	45	43	95	64	38	—	Foggy
,, 28	30·25	S.E.	43	41	87	58	39	..	Hazy
,, 29	30·24	S.E.	42	42	70	49	41	..	Overcast

Notes, Short Comments & Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Publisher."*

We cannot undertake to return MSS. not used.

CHRONIC CONSTIPATION.

Mr. N. Lorez, M.R.C.P. Lond. (Geneva), in reference to the above subject, cites a case similar to that mentioned by a former correspondent, in which a girl of the same age as that stated in the communication of "M.R.C.S., L.R.C.P. Lond." was much relieved by the administration of two drops of hydrochloric acid in water immediately after meals.

E. W. B.—The reports of the Royal Commission on Vaccination can be purchased at Messrs. Eyre and Spottiswoode's, East Harding-street, Fetter-lane, E.C. The final report is not yet published, and those issued hitherto contain little beyond the evidence. The Notification of Infectious Diseases Act provides for the Act to be adopted, but contains no provisions enabling the authority to revoke their decision.

Physician and Surgeon.—The question is one rather of taste than of legality. In our opinion the title of "Dr." should be reserved for graduates of a University; but the Registrar of the General Medical Council might be consulted on the subject by our correspondent.

A. L. (Hull) is advised to consult a medical man who has knowledge of the patient's condition, first as to the advisability of the treatment, and secondly as to the particular institution where it could be best obtained.

THE ETHICS OF NOTIFICATION.

To the Editors of THE LANCET.

SIRS,—There have been from time to time letters in THE LANCET on the powers of medical officers of health in notifiable cases. I should like your opinion on the following. I have been attending since Tuesday evening last a case which I suspected to be typhoid fever. The patient was a servant, and on Saturday afternoon I confirmed my diagnosis. This morning one of the assistant medical officers of health calls on me and informs me that he is about to visit my patient "to see if she can be removed to the sanatorium." On my telling him that I have not yet notified the case owing to Sunday intervening, he tells me that my patient's mistress, who is one of his patients, has been to him this morning and asked him to see the patient and remove her. Of course, I have no objection to his seeing her in a private capacity, but when he tells me that he has to see her as medical officer of health, as the city council have passed a resolution "that the medical officer of health shall see all cases reported for removal to judge their fitness," I consider a distinct insult has been put upon the whole profession practising in Exeter. It is not personal to me in this case, as the report had not gone in. Now, Sirs, I ask you, have the city council the power to force their medical officers of health to insult their fellow practitioners' judgment in this way, and should they submit?—I am, Sirs, yours faithfully,

Queen-street, Exeter, March 19th, 1894. R. H. BREMNER.

*** We presume the city council can make such a regulation if they choose to do so, but we agree with our correspondent that the certificate of the attendant practitioner should be accepted as amply sufficient.—ED. L.

"WHAT IS THE HYPODERMIC DOSE OF STRYCHNINE?"

To the Editors of THE LANCET.

SIRS,—Dr. Boyd refers (THE LANCET, March 24th, 1894), under the above heading, to a case of chloral poisoning I reported lately in your columns. He asks, Was the negative result of the hypodermic injections of the liquor strychninæ (B.P.) of three and four minims "to be wondered at" previously stating that these doses "must be absolutely inadequate in such cases." I express no opinion as to whether had a larger dose been used the fatal result might have been averted, but it should be remembered I was also using injections of a 1 per cent. solution of nitro-glycerine, is itself a very powerful agent. Reasoning from analogy, however, four or five minims of the liq. strychninæ given hypodermically seems a fair representative of the Pharmacopœial dose of ten or even "fifteen to twenty" minims when exhibited by the mouth. A syringeful of the extractum ergotæ liquidum (B.P.), say twenty minims, injected into the buttock gives a more rapid and effectual result than is obtained from a drachm or a drachm and a half internally and twenty minims of ether and brandy into the chest-wall acts better than twenty times that amount by the mouth, and similarly with other drugs. Half to one grain of strychnine has been used in Australia for snake-bite (THE LANCET, Oct. 24th, 1891), and a child aged sixteen months recovered from coma following the bite of the death adder after four minims of the liq. strychninæ had been given twice within a quarter of an hour (THE LANCET, Feb. 27th, 1892). Ffrench Mullen *(Indian Medical Gazette)* used five minims of liq. strychninæ, generally twice a day, with good results in the collapse of cholera, and in one case gave it seven times in thirty-six hours. Saunders used $\frac{1}{15}$ gr. of the sulphate of strychnine in acute lobar pneumonia with temporary benefit (THE LANCET, April 29th, 1893). I think the amount injected could have but little purely antagonistic effect in the case in point on the presumably large dose of chloral taken, but it must be borne in mind that I relied rather on other remedies, considering that the Edinburgh committee did not endorse the expected value of strychnine as an antagonism of chloral. The point raised by Dr. Boyd is an interesting one and I hope for further opinions.

I am, Sirs, yours faithfully,

SELBY W. PLUMMER, M.D.

County Hospital, Durham, March 27th, 1894.

Inquirens.—We regret that we cannot give our correspondent the assistance that he requires upon the information placed before us; and even had we fuller particulars his business is so purely legal that it should be discussed between himself and his solicitor.

Mr. J. F. O'Connor, L.R.C.S.I.—THE LANCET of April 23rd, 1892, contains an enumeration of Life Offices, with a running commentary on the comparative merits and advantages of the respective offices.

F. M.—An Englishman living abroad can qualify to a certain extent for an English medical degree, but will always have a considerable portion of the examinations to go through in England.

PAPAIN IN GASTRIC ULCER.

To the Editors of THE LANCET.

SIRS,—I was lately asked to see a case of ulceration of the stomach. It was a recurrent and unusually prolonged case. The patient had been in bed for five weeks. I suggested the use of papain, which was given in two grain doses every three hours. The relief to pain was felt after the first one or two doses, and both it and the hæmatemesis ceased in a fortnight. The papain was administered in the form of powders. I believe that in this drug we have a very reliable remedy for ulceration of the stomach and some forms of dyspepsia.—Yours faithfully

March, 1894. INQUIRENS.

ANTHRAX.

To the Editors of THE LANCET.

SIRS,—If any of your readers who have seen cases of malignant pustule (anthrax) and internal anthrax (without pustule) in Russia, Turkey, Persia, South Africa, South America, Australia, and other countries that export hides, hairs, wools, &c. would kindly favour me with any particulars as regards infective material, prevalence of this disease, and protective precautions against it in these countries, they would much oblige, Yours, &c.,

Hallfield road, Bradford, March 23rd, 1894. J. H. BELL, M.D.

A QUERY.

To the Editors of THE LANCET.

SIRS,—Perhaps you or your numerous readers could inform me of any published medical directory for America such as we have in Britain, giving information about the medical colleges, practitioners, &c., and oblige, Yours very truly,

March 19th, 1894. AMICUS.

APOCYNUM CANNABINUM.

WE have received from a correspondent a communication calling our attention to the merits of apocynum cannabinum, or American-Indian hemp, or Canadian dog-bane. This drug, he says, has been for some time in use in America as a diuretic, and it is included in the United States Pharmacopœia. Its value, he thinks, as a cardiac tonic has perhaps not been sufficiently recognised, and he quotes recent communications from Dr. Gliski (the *Vrach*, Nos. 6 and 7, 1894) on its action. Dr. Gliski has carried out a series of investigations on frogs and rabbits with the drug, and afterwards treated himself and several patients. He found that the root of apocynum cannabinum contains a substance which acts similarly to digitalis, but does not produce cumulative effects. It moderates the heart's action, slowing the pulse and rendering it fuller and harder. Where the heart is dilated it rapidly lessens the area of cardiac dulness. When given in cardiac cases it increases the daily secretion of urine and removes dyspnœa, palpitation, anasarca, and ascites. In medicinal doses—fifteen drops of liquid extract three times a day—it never produces any unpleasant effects beyond some throbbing of the vessels in the head. In Dr. Gliski's own case the left ventricle had been hypertrophied for three years, with temporary attacks of dilatation, during which attacks only a systolic murmur was audible at the apex. He suffered at these times from dyspnœa, which was increased by any exertion, and from pain in the præcordia. These symptoms disappeared in two days under the use of American-Indian hemp, the pulse diminishing from 110 to 80 beats per minute, and becoming fuller. During the first day there were frequent calls to micturate, but the total quantity of urine passed was not decidedly increased. In some other cases, where adonis vernalis, convallaria, strophanthus, or digitalis had proved useless, apocynum cannabinum produced an immediate effect. We have given some account of this drug in THE LANCET before March 13th, 1886, and it is mentioned in Martindale and Westcott's Pharmacopœia.

A Very Old Subscriber.—We have no reason to believe that the confidence of our correspondent would be misplaced. It must be obvious, however, that we can not invariably undertake to be responsible for the *bona fides* of those who find it to their interest to make use of our advertising columns.

J. B.—We agree with our correspondent that all forms of advertisement are censurable, and consider that of the two circular appeals to the public he has enclosed the one from the private hospital is the more undesirable.

Cautious is recommended to consult her medical attendant.

A CASE OF TETANUS SUCCESSFULLY TREATED.

To the Editors of THE LANCET.

SIRS,—I send you some notes of a case of tetanus which supervened on the infliction of a superficial wound half an inch long over the metacarpo-phalangeal joint of the left thumb. The boy was thirteen years of age and had wounded his hand while in the act of chopping a piece of beef. Pain was first felt below both scapulæ six days after the injury, and when I saw the boy fourteen days after the date of injury all the typical symptoms of tetanus were present. As the wound was healed no local treatment was adopted. The general treatment was as follows: absolute rest in bed, the room being kept dark and very quiet; liquid food every two hours, very small quantities only being taken for about ten days; half a grain of opium every two hours. As the spasms did not abate, but became even more violent after seven days, I gave instead of the opium twenty grains of chloral hydrate and twenty grains of potassium bromide every two hours. The convulsions at once abated, and for the first time the patient slept fairly soundly, slight twitchings being noticeable, however. This dose was continued for two weeks, then it was given every three hours for a week, and then every four hours for another week. During the sixth week it was given only at bedtime, and the patient was allowed to be up for an hour each evening. At the end of the sixth week the drugs were stopped, and in the following week the patient was able to be about outside. As the teeth could be separated to the extent of a quarter of an inch, we could by great perseverance get him to take fluid food in minute quantities at a time, and so nutrient enemata were not required. Now, two months since I began to attend him, he has resumed his work.

I am, Sirs, yours truly,

Kilsyth, N.B., March 21st, 1894. JAMES THOMSON, M.B., C.M.

EMBALMING.

M. P. C.—Some years ago Professor Laskowski, of the University of Geneva, published some researches he had followed out on the subject of embalming. He is stated to have used for injection a liquid consisting of a mixture of carbolic acid, chloride of zinc, and corrosive sublimate, with the addition of an odoriferous essence. The process is said to have been very successful in his hands.

B. S. R.—There is as yet no translation into English of "Il Mondo Criminale Italiano," lately noticed in THE LANCET. The work, however, which is only the first of a series of promised instalments, would be well worth introducing to the British public.

HOLIDAY TRIP TO GRINDELWALD.

IN an annotation on page 556 of THE LANCET of March 3rd the fee for the trip was erroneously printed as £6 10*s.*, instead of £10 10*s.* All particulars may be obtained from Mr. F. A. Atkins, 2, Amen-corner, Paternoster-row.

ERRATUM.—In our last impression a misprint occurred in the article on the "London County Council and the London Water-supplies." On p. 767, second col., line 23rd from the bottom, for "3 per cent." read *3 to 1*.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (1 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.).

TUESDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1.30 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.).

WEDNESDAY.—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), Great Northern Central (2.30 P.M.), King's College (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Great Ormond-street (9.30 A.M.).

THURSDAY.—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (2 P.M.), Chelsea (2 P.M.), Soho-sq. (2 P.M.), North West London (2 P.M.)

FRIDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.)

SATURDAY.—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY.—MEDICAL SOCIETY OF LONDON.—8.30 P.M. Mr. H. Percy Dean and Mr. Jonathan Hutchinson, jun.: Abdominal Section for Acute Intestinal Obstruction by Bands, with record of a case in which it was successfully performed twice on the same subject.—Dr. Pasteur and Mr. Bland Sutton: Abdominal Section for Acute Intestinal Obstruction by a Band; Recovery.

WEDNESDAY.—OBSTETRICAL SOCIETY OF LONDON.—8 P.M. Specimens will be shown. Dr. Amand Routh: Cases of Associated Parovarian and Vaginal Cysts formed from a Distended Gartner's Duct.—Dr. J. Braxton Hicks: On Intermittent Contraction of Uterine Fibromata and in Pregnancy in relation to Diagnosis.

ROYAL MICROSCOPICAL SOCIETY (20, Hanover-sq., W.).—8 P.M. Conversazione at St. Martin's Town Hall, Charing-cross, W.C.

THURSDAY.—HARVEIAN SOCIETY.—8.30 P.M. Clinical Evening. Dr. James Taylor: Two cases of Friedreich's Ataxy.—Dr. G. A. Sutherland: Gummata of the Liver in a Child. Cases shown also by Dr. Sydney Phillips, Dr. Boxall, and others.

FRIDAY.—WEST KENT MEDICO-CHIRURGICAL SOCIETY (Miller Hospital, Greenwich).—8 P.M. Discussion on Headache by Drs. Harry Campbell, Newton Pitt, Francis Tayler, George Herschell, Ernest Clarke, and others.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY (West London Hospital), 8 P.M. Specimens:—Mr. G. Mallack Bluett: Foreign Body swallowed and passed per Anum.—Mr. P. Macleod Yearsley: Fibromata of Ovary. Papers:—Mr. F. Bowreman Jessett: The Treatment of Advanced Cases of Carcinoma of Uterus.—Mr. L. A. Bidwell: Remarks on Amputation of the Breast for Cancer.—Mr. W. H. Battle: Two cases of Malignant Disease of Penis.

LECTURES AND ADDRESSES.

MONDAY.—ROYAL INSTITUTION.—5 P.M. General Monthly Meeting.

TUESDAY.—ROYAL INSTITUTION.—3 P.M. Prof. J. A. Fleming: Electric Illumination.

WEDNESDAY.—WEST LONDON HOSPITAL (Hammersmith, W.).—5 P.M. Dr. Seymour Taylor: The Therapeutics of Heart Disease. (Post-graduate Lecture.)

THURSDAY.—ROYAL INSTITUTION.—3 P.M. Mr. F. Seymour Haden: The Etching Revival.

FRIDAY.—ROYAL INSTITUTION.—9 P.M. Prof. V. Horsley: Destructive Effects of Projectiles.

SATURDAY.—ROYAL INSTITUTION.—3 P.M. Mr. J. A. Gray: Life among the Afghans.

During the week marked copies of the following newspapers have been received:—*Huddersfield Chronicle, Eastern Morning News, Evesham Journal, Southport Guardian, Kentish Express, Southport Guardian, Kentish Express, Lytham Times, Western Morning News, Oxford Times, Southampton Echo, Times of India, Rochester Journal, Deal Advertiser, Leeds Times, North British Advertiser, Ilfracombe Chronicle, Denbigh Free Press, Cambridge Independent Press, Swansea Journal, Sunderland Herald, Scarborough Post, Lichfield Mercury, Yorkshire Post, West Middlesex Advertiser, Lincolnshire Chronicle, Local Government Chronicle, City Press, West Middlesex Standard, Sanitary Record, Leeds Mercury, Surrey Advertiser, Liverpool Daily Post, Reading Mercury, Bristol Mercury, Pioneer Mail, Architect, Citizen, Builder, Sunday Times, Bedfordshire Times and Independent, Brighton Times, Local Government Journal, Australasian Medical Gazette, Edinburgh Evening Dispatch, Halifax Courier, Kingston Express, South Wales Star, Goole Weekly Herald, Kenilworth Advertiser, Newport Pagnall Gazette, Somerset Express, Ripley Advertiser, Staffordshire Weekly Post, South Durham Mercury, &c., &c.*

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